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NUTRITION IN REVIEW

REPORT
OF THE
NEW YORK STATE
JOINT
LEGISLATIVE COMMITTEE
ON
NUTRITION

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Nutrition in Review

REPORT

OF THE

NEW YORK STATE

JOINT LEGISLATIVE COMMITTEE

ON NUTRITION

COMPLIMENTS OF
THOMAS C. DESMOND
SENATOR 32ND DISTRICT

LEGISLATIVE DOCUMENT 1945
No. 49

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NEW YORK STATE JOINT LEGISLATIVE COMMITTEE ON NUTRITION

Senator Thomas C. Desmond, Chairman
Assemblyman Jerome C. Kreinheder, Vice-Chairman
Senator Edward J. Coughlin, Secretary
Senator Robert S. Bainbridge
Senator Seymour Halpern
Assemblyman Myron D. Albro
Assemblyman Charles Bormann
Assemblyman Edith C. Cheney*

Ex-Officio Members—Senator Benjamin F. Feinberg, *President Pro-tem of the Senate;* Speaker Oswald D. Heck, *of the Assembly;* Senator Elmer F. Quinn, *Minority Leader of the Senate;* Assemblyman Irving M. Ives, *Majority Leader of the Assembly;* Assemblyman Irwin Steingut, *Minority Leader of the Assembly;* Senator Arthur H. Wicks, *Chairman of the Senate Committee on Finance;* Assemblyman D. Mallory Stephens, *Chairman of the Assembly Committee on Ways and Means.*

Committee Staff—George A. Yaeger, *Director of Research;* William A. Martin, J. G. Reese, Charles L. Franke, Paul Jones, Miss Helen Ernest.

* Mrs. Cheney is now Supervisor of the School Lunch Program of The State Education Department.

Introduction

To the Governor and Legislature of the State of New York:

Advances in general knowledge of nutrition have been so marked since creation of the New York State Joint Legislative Committee on Nutrition[1] as to be little short of amazing. These advances have been given impetus recently by two major factors: (1) Organized effort by authoritative agencies of nutrition education, supported by newspapers, magazines and the radio, and (2) the war, which has impressed the necessity of doing with less food than usually, but food which is nutritionally better.

Especially during the past year of the war have the increased demands of our fighting men depleted the civilian larder. Every citizen is now intimately familiar with rationing, and, incidentally, too, with a malodorous by-product —the black market.[2] Add to the requirements of our armed forces the needs of civilian victims of the war, and there arises a vivid picture of what is happening to our usual supplies. As armies advance, further destruction of crops in enemy territory is inevitable. Hunger stalks through many large areas of the world, and its strides may become longer.

Nearly 15 per cent of all the food we produce is required for our fighting men who, it is estimated, eat nearly twice as much as they ate as civilians. For our fighting Allies and for relief to men, women and children in the liberated areas almost another 10 per cent is required. Thus, an approximate fourth of our over-all production is unavailable to meet civilian requirements.

Meanwhile, the American farmer —including, of course, the thousands of patriotic and skilled tillers of the soil of New York State— have made new records in food production. Reports to this Committee emphasize that this agricultural accomplishment has been incredible. Significant is the realization that these records have been made in the face of three major handicaps: (1) An extreme shortage of manpower; (2) shortage of farm machinery; and (3) difficulty in getting proper repair of existing machinery. National crops in 1942—first full year of the war— were phenomenal, as was production in 1943, and 1944 was another record-breaker, especially in wheat and corn.

Helping ease demands on the normal supplies of some commodities were Victory Gardens—20,000,000 in the Nation, and an approximate 1,141,000 in New York State during 1944. It was the privilege of this Committee to help stimulate interest in Victory Garden production.

Despite these historic accomplishments in food production and although our sights have been raised for 1945, conditions expected

[1] For resolutions continuing the 1943 and 1944 Committees, see Appendix.

[2] The Black Markets are treated in considerable detail in the 1944 report of the Committee, entitled "Food—in War and in Peace."

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to follow victory[3] are not likely to permit any immediate increase in food supplies. This does not mean that we shall cease to be the best fed nation in the world, but it does mean, in all probability, that we shall continue for some time to be inconvenienced in our food purchasing and circumscribed in our desires to buy particular items of food. There will continue to be an imperative need for producing and buying of food high in nutritive values and for closer attention to nutrition education.[4] It would be unfortunate were the coming of peace to cause us to forget some of the lessons about food which the war has taught us.

Committee Proposals

To the end that the value of nutrition in helping to build a healthier, stronger and more contented people be further stressed and that the State play a more vigorous role in dramatizing its importance, this Committee recommends:

1. That the State recognize at once the need for an expanded program of nutrition education within its borders.

While much already has been done, and this Committee appreciates that some programs may be hindered by the war, much more is possible through existing agencies and by creation of new agencies. An outstanding School of Nutrition now functions at Cornell University, directed by Dr. L. A. Maynard (who has contributed to the work of this Committee), but there is a clear need for general education in nutrition in high schools and grammar schools.

2. That the State study the relationship of marketing practices and production to adequate nutrition.

In his message to the Legislature in January, 1945, Governor Dewey very properly emphasized the need in this State of a marketing system which is "fast, efficient and honest for the handling of fresh food, such as fruits and vegetables, eggs and milk." He added: "Consumers, especially in our larger towns and cities, are being forced daily to make drastic and sometimes unhealthful adjustments in their diets." For the individual consumer there is an important relationship between these marketing practices and his nutritional needs. Inadequate purchasing power (according to present standards) has accentuated the necessity for buying those foods high in nutritive value, to compensate for bulk loss. The State should also re-survey food production to ascertain whether from a nutritional viewpoint there is proper regard for both qualitative and quantitative growing.

3. That the State re-appraise the entire field of nutritional practices carried on under its aegis.

Analysis should be made of those present units of the State which deal with nutrition, with determination as to whether they should

[3] While capitulation of Germany was imminent when this was written, it had not yet fallen. But its fall was not expected to ease immediately existing shortages.

[4] See statement by Dr. Bertlyn Bosley in the body of this report.

be centralized or co-ordinated. If co-ordinated, the co-ordinating agency should be headed by a policy-making council from all State units concerned with nutrition, and representatives of such institutions as are concerned with research and education in nutrition. To enjoy the prestige and influence necessary for proper co-ordination, this council should be appointed by the Governor and should carry on its work preferably through an administrative director, working through the Department of Health. The need of such an agency has been pointed out in previous reports of this Committee.

4. That the State give permanence to nutritional activities.

The recognized importance of nutrition makes it a proper and permanent concern of government —even as the health of the citizen and adequate water supplies for him are proper and permanent concerns. Our State Government, assisted by private agencies and encouraged by an informed public opinion, has a duty to lead in putting proper food within the reach of all its people. Numerous State agencies already are concerned with nutrition, among them the New York State Emergency Food Commission which is directed by Dr. Maynard. But no long-range, co-ordinated nutritional policy and program by the State is possible until all of our nutritional activities are recognized as essential and permanent.

5. That the State encourage research in the field of nutrition.

If research in nutrition is desirable and effective—as, indeed, it has been—in privately-owned food industries, it is even more desirable that the State encourage such research in publicly-supported institutions, so that the results obtained be of wider influence. Projects such as those conducted at the College of Agriculture at Cornell University—where men and women devote their lives to the quest of better health for people—merit the full support of the State. The State might well consider an appropriation specifically earmarked for the School of Nutrition, so that the scope of its work might be widened.

State-encouraged research important.

6. That the State give new recognition to the special nutrition needs of children.

During 1943 the State Education Department was given the authority to direct the school lunch program, which program this Committee earnestly recommended in its first report and re-emphasized in its 1944 report. The school lunch program was continued in 1944 in New York State through funds made available to the Education

Department by the New York State War Council and by the State's sharing in an appropriation of $50,000,000 voted by the Federal Congress. In the judgment of this Committee, the importance and value of the school milk and lunch program cannot be overemphasized, for the school boys and girls of today are the men and women of tomorrow; if we insure adequate diets for those children, we shall be contributing to their health now and perhaps helping to train them in food habits which will be of lasting benefit throughout their lives. Official surveys made nationally indicate that only about 25 per cent of children in school are served hot lunches, and more children suffer from malnutrition than from any other deficiency disease. These findings have direct relationship to the fact that more than 4,000,000 of our youth examined for induction into military service had to be rejected because of physical defects.

7. That the State give greater consideration to stiffer penalties for black marketeering.

It was inevitable that black marketeering should be a spawn of war in the Nation and in our State, even as it has developed in other warring countries. In New York State, under the War Emergency Act, violations of rationing, freezing and price fixing are punishable by a maximum fine in each instance of $25 or five days in jail, or both. Weighed against the illicit thousands made by those playing this nefarious game, this small pen-

alty does little to discourage such racketeering. The situation has resulted in introduction at the 1945 session of the Legislature of a bill[5] greatly to increase the penalty and to make conviction easier. If the measure fails of adoption at this session, the Committee recommends passage of either this bill or a modified bill at as early a future date as possible. The present bill is fully acceptable to the OPA, and has been drafted to make it consistent with suggestions advanced by officials of the New York State War Council.

8. That the State lend its influence to further experiments in fluorination of community water.

In its previous reports this Committee emphasized the unusually low prevalence of dental caries in communities whose residents had access to water in which fluorine was present, and urged demonstrations to determine the effect of introducing fluorine into communal

[5] For provisions of bill, see Appendix.

water supplies. In April, 1944, a demonstration, previously planned, actually was started by the Department of Health, under supervision of Dr. David B. Ast, Chief of the Dental Bureau of the Department. Known as the Newburgh–Kingston caries–flourine demonstration, it was fully described by Dr. Ast at the December 13, 1944, hearing of the Committee in New York City.[6] Because the demonstration is to run for 10 years no complete conclusion by the Department can be reached until it is finished. Meanwhile, similar tests should be attempted in such communities as find them practicable.

9. That the State help curb food waste.

Despite admitted shortages in food and the economic barriers among many of our people to purchasers of the most nutritive food, the American habit of wasting food persists. As a people we still permit tons to spoil and to be tossed or scraped into garbage pails. Among householders this habit cannot be changed by legislative fiat, but in State institutions and restaurants and hotels some diminution of it might be effected were the State War Council empowered to issue and to enforce rules and regulations seeking food conservation.

10. That the State continue its interest in nutrition in industry.

This Committee has recommended previously, and it repeats the recommendation, that an aggressive nutrition campaign be carried on in war plants of the State, to improve the health and morale of war workers and to achieve a 10 per cent greater production which nutritionists believe would result from improved diets.

11. That the State exert its influence to maintain prices at proper levels.

The rising costs of food pose a problem that essentially must be handled by Federal authorities. The State has no right, however, to sit supinely by while its 13,000,000 people wrestle individually with the problem. The State has the duty to support and to project plans designed to keep food within the reach of low-income groups or to make the effects of rationing more equable.

12. That the State adopt a system of dietary surveys.

The dietary status of people in the various economic levels is not known precisely, despite its importance as a basis for State and National food policies. For example, there are no complete or accurate data revealing the effect on low-income groups of price changes and rationing. Institution of a system of dietary surveys such as that which helped solve England's problem might obtain the basic information for formulation of an intelligent nutritional policy. The importance of this to the State could easily be translated into importance for the Nation, too.

[6] See Dr. Ast's testimony in body of this report and Senator Desmond's article, "Drinking to Your Health," reprinted in this report.

13. That the Committee on Nutrition be extended.

While many phases of nutrition already have been embraced in the scope of the Committee, there are many other fields as yet unexplored by it. We recommend that the Committee be extended,[7] with all its previous powers and duties, to March 1, 1946, so that among nutritional activities in which it may engage will be: (1) Study of the proper role of the State's nutrition services in the national postwar food program; (2) study of the nutritional phases of food freezing, community lockers and dehydration; (3) consideration of what further steps can be taken to popularize nutrition; (4) further study of the school lunch program; (5) further study of the effects of fluorination of water on prevention of tooth decay; (6) study of sugar conservation and the use of available substitutes, such as syrups and honey, in baking; (7) determination of whether modification of the State's laws dealing with butter substitutes, at least for the duration, is practicable; (8) study of nutritional and dietary practices in State institutions.

A few of these recommendations have been made before; the majority of them are new for this Committee. Further and more specific recommendations are made in the body of the report. All are intended to supplement such nutritional activities as are now carried on by the State's uncoordinated agencies and, in brief, are a partial index to the proper role the State should play in the great work of nutrition.

Committee Activities

Crystallizing these recommendations have been the Committee's activities since it was created. This program has included inquiries into nutrition educational practices, school lunches, nutrition in industry, enrichment of flour and bread,[8] food habits, the impact of war on food supplies in the State as well as in the Nation, black markets and inflation, food policies and prospects in general and the meat situation in New York City in particular.

The Committee's work has been carried on by a research staff guided by the Chairman and a research director. Its data has been obtained from nutrition experts and others, through conferences with State and Federal officials, through counsels with OPA officials and city executives, through first-hand observation and through the medium of hearings at which experts have testified.

Hearings

The Committee work has embraced three public hearings; which attracted wide attention and obtained for the Committee a large quantity of valuable and important information. Among those heard at the various hearings were Mrs. Franklin D. Roosevelt; Mayor F. H. LaGuardia, of New York City; Dr. L. A. Maynard, Dean,

[7] For resolution extending the Committee, see Appendix.
[8] For bill on this subject, see Appendix.

School of Nutrition, Cornell University; Dr. N. E. Dodd, Chief of the Agricultural Adjustment Agency; Dr. Roy F. Hendrickson, former Director of Food Distribution, War Food Administration; Professor F. A. Harper, Department of Agricultural Economics, Cornell University; Daniel P. Wooley, OPA Regional Administrator; Dr. George D. Stoddard, State Commissioner of Education; Dr. E. R. VanKleeck, State Deputy Commissioner of Education; Dr. William C. Ockey, Chief, Civilian Food Requirements Branch of the Office of Distribution, War Food Administration; Dr. Bertlyn Bosley, Associate in Nutrition, Teachers College, Columbia University; Dr. David B. Ast, Chief, Dental Bureau, State Department of Health; and many other experts in their various fields.

The results of all of the Committee's varied activities have been summarized in two earlier reports and are further detailed in the 1945 report of which this Letter of Transmittal is a part. To both the earlier reports, "The Nutrition Front" (1943) and "Food—In War and In Peace" (1944), the reception by food experts, nutritionists, schools and universities, public libraries, doctors, the scientific and lay press and magazines has been notably satisfactory. The 4,000 copies of the first report long since have been exhausted, and a similar number of copies of the 1944 report (in five consolidated parts) is approaching exhaustion. Early in 1945 the Committee, for the State Department of Education, had 4,500 reprints of the section of the 1944 report devoted to school lunches made, for distribution by the Department to schools of New York State. Both the first two reports were planned and edited under direction of Albert J. Abrams, assistant to the Chairman, and George A. Yaeger, of the research staff; the 1945 report was planned and edited by Mr. Yaeger,[9] the present research director.

Advisory Council

Important to the work of the Committee has been its Advisory Council on Nutrition in Industry, which contributed especially to the first two reports. This Council consisted of: Miss Elsie Bond, Assistant Secretary, State Charities Aid Association; Dr. Frank G. Boudreau, Chairman, Committee on Nutrition in Industry, National Research Council; Mark A. Daly, Executive Vice President, Associated Industries of New York State, Inc.; Dr. Elizabeth N. Gardner, Chairman, New York State Nutrition Committee; Lieutenant-Commander C. M. McCay, Professor, New York State College of Agriculture; G. H. Pfief, Supervisor of Personnel, General Electric Company; John Sloane, former Chairman, Committee on Public Health and Welfare, New York State Chamber of Commerce; Gustave A. Strebel, President, New York State Industrial Union Council; and Lazare Teper, Director, Research Department, International Ladies' Garment Workers' Union.

[9] Replacing Mr. Abrams, now in the U. S. Army.

Acknowledgments

The Committee is glad to express its appreciation to the able corps of nutritionists, scientists, food experts, physicians and public officials who helped the Committee and its staff in its studies and investigations. Especially co-operative have been the State Department of Health and its Division of Public Health Education, the press section of the United States Department of Agriculture, the State Department of Agriculture and Markets, the United States Office of War Information, and the Visual Service Section of the Marketing Reports Division of the War Food Administration. The Committee acknowledges also generous co-operation of newspapers and the radio in dissemination of news, and of magazines in publicizing various phases of the Committee's activities and related aspects of nutrition.

Conclusion

Nutrition is a subject about which much already is known. But as each new finding is made there comes the realization that much more remains to be discovered. While food habits vary widely, according to earning power, early training, geography, constitution and temperament, nutritionists know that the citizens of New York State cannot be physically strong or mentally alert unless their dietary habits are nutritionally sound. One of the important lessons highlighted by the war is that we must eat well, not economically but nutritionally. Nutritionists and educators are doing all within their power to bring these important facts home to the people. To these nutrition leaders and workers both the Nation and the State owe enthusiastic support and encouragement.

Respectfully submitted:

NEW YORK STATE

JOINT LEGISLATIVE COMMITTEE ON NUTRITION

Senator Thomas C. Desmond, Chairman
Assemblyman Jerome C. Kreinheder, Vice-Chairman
Senator Edward J. Coughlin, Secretary
Senator Robert S. Bainbridge
Senator Seymour Halpern
Assemblyman Myron D. Albro
Assemblyman Charles Bormann
Assemblyman Edith C. Cheney

The Narrative of the 1945 Report

By Senator Thomas C. Desmond

Chairman, New York State Joint Legislative Committee on Nutrition

IN THE 1945 report of the New York State Legislative Committee on Nutrition an attempt has been made to treat some of the more important aspects of food and nutrition with an eye on world events and the part the Nation and New York State eventually must play in those events. As material for the report starts on the way to the printers, neither the European phase of the war nor that in the Pacific has ended, although the fall of Nazi Germany appears to be imminent.

How long after that fall Japan will capitulate is conjectural, but in the judgment of many observers it may be before the end of this year or by 1946 at least. On that premise precedence in the report is given to analysis of the European food situation, and dealt with next, perhaps in logical sequence, are food prospects—including milk and meat—at home, to which prospects, of course, the fate of the liberated peoples of Europe and Asia will be linked when hostilities are ended.

Considering food prospects, the Commission has treated also shortages in some articles of food, and the reasons therefor, including discussion of black markets, what causes them and some of the methods employed to cope with the black markets.

From food to the importance of the nutritive values of food, is the next step, but before taking that step, the report takes note of the fact that in most of the world there are food differences. Stressed too are nutritional deficiencies, with some outlines of what advancement has been made toward helping to correct those deficiencies.

Education in nutrition is, of course, of paramount importance, and this phase of nutrition is considered in detail—what has been done and what program is contemplated in New York State, in teaching nutrition education to children, at Cornell University, by the New York State Emergency Food Commission, and, nationally, by the Nutrition Foundation and the War Food Administration.

The report also covers a review of the important demonstration in fluorine control of dental caries, being carried on in Newburgh and Kingston; it devotes a chapter to frozen food lockers, the awakened public interest in nutrition, the effect of advertising on food and nutrition, and vegetarianism and nutrition.

The reader or student of this report is asked to bear in mind that the observations made, the suggestions offered and the conclusions drawn are all products of a period when, although the end of the war happily may be near, the conflict still rages. The war's termination will, of course, nullify some of the findings but all combine to shed light on some of the ramifications of the very vast subject of nutrition. Even though these findings are embraced in a somewhat dignified state document, in reality they make up a rather exciting drama.

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The New York State Joint Legislative Committee on Nutrition

(Review of a 1944 hearing, by Jane Dale, Ph.D., in Health News, New York State Department of Health Publication)

—Acme Photo

At a Committee hearing: Senator Thomas C. Desmond (left), Chairman, ponders a question on black markets by Paul L. Ross (right) of OPA while Senator Robert S. Bainbridge, of the Committee, awaits the answer.

"1945 Food Prospects and Problems" and "Nutrition in Education" were discussed by 14 speakers at two sessions of the Joint Legislative Committee on Nutrition, Senator Thomas C. Desmond, Chairman, which met recently[1] for a public hearing in New York City.

Mayor Fiorello LaGuardia described the New York City school lunch program under which 53,000 lunches are served from a central kitchen at a cost of 10 cents apiece, some of the measures used against black markets, and the reasons underlying the threatened strike of retail butchers.

As representative of the regional Office of Price Administration, Paul L. Ross discussed enforcement measures including heavy fines, withdrawal of subsidies, imprisonment for periods of 20 days or more, and damage suits.

[1] December 13, 1944.

The question, "Why Black Markets in Food?", was answered by Nathan Sweedler, attorney for Eastern States Independent Slaughterers and Meat Packers, Inc., by placing much of the blame on arbitrary practices such as the basing of prices on cuts of meat or ways of dressing fish which are not found locally.

In a clear "Interpretation of the European Food Situation," Dr. John M. Cassels, Office of Food Programs, Foreign Economic Administration, said that conditions in general are tight but present many gradations, as between Greece and Denmark, between urban and farm dwellers and between races. He reminded the Committee that in the United States one-third of the food supply consists of cereals and potatoes; in most other countries, two-thirds. Worse conditions are to be expected. In the past four years, ends have been made to meet by rigid controls. Liberation of occupied countries will mean destruction and disorganization. Moreover, Doctor Cassels implied, since the liberated nations definitely look to this country for help, there is danger of demoralization if such aid is not up to expectations.

Describing "Food Differences Around the World," Professor F. A. Harper, New York State College of Agriculture, urged a realistic approach to improvement of food supplies in other countries. Such differences are not due to war but are chronic. Improvement is needed more in quality than in quantity. To bring the world to United States levels would require provision of three times the present supply of food from animal sources. If the present supply of animal foods were redistributed to give the same diet to the entire world, that six per cent of the people in the United States who now consume the smallest amounts would have to give up half their animal products.

Dr. L. A. Maynard, Cornell University, who spoke as commissioner for the Nutrition Division of the New York State Emergency Food Commission, cited possibilities in "The Improvement of the Nutritional Quality of Our Food Supply." Vitamin C can be increased somewhat in cabbage and two- to three-fold in apples; vitamin A values of winter butter and sweet potatoes can be raised. Losses of special nutrients in cooking which now run about 50 per cent might be held down to 20 per cent. Too much emphasis is placed on the richer, more expensive sources of protective factors and too little on cheaper sources and the conservation of their values. Doctor Maynard gave a timely warning about the use of vitamin concentrates. Natural foods have values as yet undiscovered. Concentrates probably are harmful to the interests of nutrition, leading to indifference on the part of producers and consumers. A long range program of education, production, and conservation is far better than temporary enrichment.

Dr. David B. Ast,[2] assistant director of oral hygiene, New York State Department of Health, outlined plans for "The Newburgh-Kingston Caries-Fluorine Demon-

[2] Chief of the Dental Bureau.

stration'' which is being conducted by the Department with the cooperation of the communities mentioned.

In spite of increased production costs, ''The 1945 Milk Outlook'' is fairly good according to Fred H. Sexauer, president of the Dairymen's League Cooperative Association. Recently there has been less diversion to other markets and the average size of herds has been larger; feed supplies, except for hay, are higher per head of cattle. Restrictions on equipment have been lifted, at least temporarily. Mr. Sexauer warned that the milk shed must be guaranteed or farmers will decide that high sales prices for cows and other factors make this a good time to get out of business.

Speaking in detail on ''Prospective Civilian Food Supplies in 1945,'' Dr. William C. Ockey, Office of Distribution, War Food Administration, attributed the present increase of 35 per cent in production over 1934–1939 levels to the soil conservation program which began in 1943. With intended production high, the 1945 yield will still be subject to the hazards of weather, insect pests, and diseases of plants or animals. In any case, the meat supply, while less, will be above the 1934–1939 average and above nutritional requirements; poultry has been ''set aside'' as the prime morale food for the armed forces. Fats will be very short, sugar low and canned fruits about two-thirds of the 1934–1939 supply. Doctor Ockey sounded two notes of optimism. Government food sales should not cause disruption since WFA stocks have already been pared and experience in family diets has been brought about by education in the programs for school lunches and industrial feeding.

Ole Salthe reviewed the work of the Nutrition Foundation, of which he is executive secretary, in supporting research on the relation of nutrition to lactation, rheumatic fever, tooth decay, diagnosis of deficiencies, and also in publishing *Nutrition Reviews* and providing fellowships for training of physicians and dietitians.

The activities and viewpoint of the State Education Department were presented in an address on ''Nutrition for Tomorrow's Better World,'' by Dr. Edwin R. Van Kleeck, Assistant Commissioner for Instruction, who also read a paper by Dr. George D. Stoddard, State Commissioner of Education, on ''Nutrition Education in the State of New York.''

Assemblyman Jerome C. Kreinheder, Buffalo, member of the Joint Legislative Committee, read a paper by Frank E. Gannett which stressed the obligation of teachers and schools to practice what the children are taught and to avoid contradiction of instruction through the sale of candies, cookies, carbonated beverages, and the like

Dr. Bertlyn Bosley, of Columbia University, outlined a progressive program for ''Teaching Practical Nutrition to School Children'' from the first through the sixth grade.

". . . those people in Europe are looking to us and our Allies to help them in this situation."

The European Food Situation

By Dr. John M. Cassels

Special Assistant to the Director, Office of Food Programs, Foreign Economic Administration

—French Press and Information Service

The threat of starvation in Europe is real. This elderly French woman is cooking her meal within the shelter of a bomb-shattered cathedral.

It was very foolhardy of me to accept an invitation to speak on the subject so large as the European food situation.

I venture to do it because I thought it was so very significant that a group, such as Senator Desmond's group, with so many nutrition problems and with such constructive work going on within your own State, could spare time on your program to raise a question on the food situation in Europe.

Needless to say I think it is a subject in which all of us have a very vital interest not only from a humanitarian point of view, but also from a broader view of international statesmanship, and even from a selfish point of view of our own country's role in international affairs.

There has been in the past, I

think, a good deal of misunderstanding about the food problems of Europe with which we will have an opportunity to deal as the Germans are driven back, many of which now confront us in a very real form.

We have had a tendency either to paint the picture too black or too rosy. In the first years of the war we were inclined to paint it too black and more recently we have had a dangerous tendency to brush it aside and feel that the situation in Europe was so much better than we expected that we might not have anything to do about it at all.

Both reactions, I think, were perfectly natural, reflecting a certain amount of wishful thinking and a certain amount of special building.

In the early years of the war we were only too eager to believe that Germany was vulnerable on the food front. I think perhaps a good many, as I confess in my own case, were inclined to generalize that Germany depended largely on import of food. The fact was that Europe before the war produced 90 per cent of the food that they ate. But when we entered the war we liked to think that Germany might be stopped by a blockade. People went through the same phase of thinking about food in the war during 1914 and 1915.

Secondly, the representatives of the occupied countries, very naturally wanting to emphasize the importance of providing relief when the countries were liberated, also told an extreme story about the conditions, the food conditions, under which the people were living in Europe. Besides this, information from the underground movement stressed the most acute cases.

The Other Side

Now, coming to the more recent swing of the pendulum in the opposite direction, that action has been influenced by some special factors. Our knowledge of Europe is not as great as it might be and I suppose maybe only one person in 100 would be aware, when our troops first landed, that Normandy was one of the richest agricultural areas of the world. If we had known that we would not be surprised when we heard reports that they found large stores of cheese, large supplies of fruit—innumerable products.

That was to be expected, if we had the story against the proper background.

As our armies invaded further into France and got reports elsewhere throughout France, again the reports were biased by the fact that we entered that country immediately after harvest. It was thus only to be expected that we would find the granaries full, and they were.

The breakdown of transportation prevented the flow of food into the larger cities like Paris and Marseilles, but at the same time it meant there was a backing up of food in the agricultural areas; so when the people went around serving food in France, they said, "There is plenty of supplies, more than they can sell."

One other minor factor is that American observers in France are unfamiliar with the high, average rates of yield in European countries.

So we had a tendency to swing from one extreme to the other. I am convinced, on the basis of any work I have done recently and the chances I had to talk to people who knew more about it than I did, that there is a very acute situation in Europe ahead in regard to food. It is important for us to get it in its proper prospective and view it in its proper proportions.

It is wrong to say that Europe's people as a whole are starving. They are not. They could not have fought a war if they had been. On the other hand, it is wrong to go to the other extreme and say there is no starvation or threat of starvation in Europe. There is a very real threat in many places.

But the character of the problem is one which we should understand as clearly as we can. The food supply of Europe as a whole is not plentiful. Europeans are not starving, but do not think as a whole they have surpluses on their hands. They do not.

Before the war, Europe produced 90 per cent of its food. What was the effect of the war mainly as far as imports were concerned? It cut off foods imported in large quantities, food for cattle that contributed largely to the production of animal products and fertilizers, that contributed to the grain production and crop production. Those things were cut off. You had a decline in general productivity and a cutting off of the direct food supplies in the forms of fats and oils.

In this situation, with a general decline in productivity, it was necessary in Europe for them to reorganize their agriculture, bring

—French Press

War victim at Noisy le Sec gets municipal hot meal.

their whole agriculture and food economy under strict control. And they did that. We have to give them credit. There was an extremely good job done in the way of food management on the continent of Europe from the planning of what should be drawn from the collection quotas collected from the farmers and the distribution through rations and price control and those economies that they needed were well developed. They had no slack left in that economy as far as food is concerned.

Differences in Viewpoints

Now the next point for us to grasp is that there are wide disparities between different countries and between different groups in Europe. Taking it all against this background of a tight food situation overall, country by country, the most extreme case at the bottom end of the scale is Greece. We are inclined to estimate that they did not have more than 1,500 calories on the average, which is less than half of what we had in this country.

ESTIMATED AVERAGE CALORIE CONSUMPTION

PREWAR AND 1943-1944

(PER HEAD PER DAY)

	PREWAR (b)	1943 – 1944	1943 - 44 AS % OF PREWAR
UNITED STATES	3080	3190 (c)	104
UNITED KINGDOM	2990	2890 (c)	97
DENMARK	3200	3020 (d)	94
GERMANY	3000	2590 (d)	86
CZECHOSLOVAKIA	2700	2450 (f)	91
AUSTRIA	2800	2440 (d)	87
POLAND (a)	2600	2400 (f)	92
YUGOSLAVIA	2900	2350 (e)	79
FINLAND	3000	2320 (d)	77
NORWAY	3000	2310 (d)	77
FRANCE	3100	2230 (d)	72
NETHERLANDS	2800	2160 (d)	77
BELGIUM	3000	2020 (d)	67
GREECE	2400	1500 (e)	63

(a) WEST OF CURZON LINE

(b) SEE NOTE ON PREWAR CALORIE ESTIMATES

(c) FOOD CONSUMPTION LEVELS IN U S., CANADA AND U K. SECOND REPORT, OCT. 1944 AVERAGE FOR CALENDAR YEARS 1943 AND 1944. U.S. FIGURES ADJUSTED FOR COMPARABILITY ON THE SAME BASIS AS BRACKETED FIGURES IN ORIGINAL REPORT I.E., REDUCED FROM 3355 TO 3193.

(d) BASED ON COMBINED WORKING PARTY ESTIMATES

(e) BASED ON PRELIMINARY DATA FROM CWP STUDY.

(f) OSS ESTIMATES

Among the European countries at the top of the scale is Denmark which came through in a very definite position in regard to food; it was a food exporting country before the war, rather favorably treated by the Germans and almost able to maintain food consumption at pre-war levels. Between those countries you have countries more or less at the low end of the scale; you have Belgium, France and so on.

Between those countries you have differences between the agricultural population and the non-farming regions. You have the most serious cases in large cities that are far from surplus food producing areas. In some countries, like Poland, you have further discrimination on a racial basis which makes for an acute, serious situation.

Now in trying briefly to sum up this picture, I would like to refer to charts. There is always a great danger in trying to put down figures or representation of figures in charts. I do not want anybody to think that I believe we can go in and look at the European situation and get any exact measurement. But I think it is worth while to get the best estimates indicating the broad details of the situation.

In order that you do not forget that these are only estimates, or as some of my agricultural friends refer to them as questimates, I have marked each of these bars with a question mark. Someone suggested I have a large question mark through the whole thing. Nevertheless, I do think we got the broad outlines of the picture, and for practical purposes that is what we need.

The orange color bar represents pre-war consumption and the red bar represented an estimate for the year 1943–44. Thus when we look at the chart relating only to calories I want to emphasize that does not tell the whole story about the food situation. It is one measure of food energy.

The third chart will illustrate what I mean by a limitation of that particular measure. Roughly from this chart you see in the United States we have the highest consumption in the world at the present time; that we have actually bettered our condition. On the average our people eat more than they did before the war. It is the only country that I know of in which that is true.

In Great Britain they have had a slight decline in calory consumption—something like three per cent, whereas we were up by four per cent. In Denmark they held their own and at the present time eat better than the British people. In Germany there is a decline of 15 per cent from their pre-war level, and in some countries much more than that. The two lines I have marked vertically are the 2,000 and the 2,600. The 2,000 level is a bare minimum for relief.

UNRRA Standard 2,650

The UNRRA has recognized that that is too low and they are setting 2,650. Everybody is agreed, military as well as civilian, that the 2,000 is too low as an average for the people. On that basis, we find only one country that was at

ESTIMATED AVERAGE CALORIE CONSUMPTION

FARM AND NON-FARM

	FARM POPULATION AS % OF TOTAL	FARM CONSUMPTION PER HEAD PER DAY	NON-FARM CONSUMPTION PER HEAD PER DAY	NON-FARM CONSUMPTION AS % OF FARM CONSUMPTION
DENMARK (a)	28	3150	2970	94
GERMANY (a)	20	3270	2250	69
CZECHOSLOVAKIA(b)	33	3000	2250	72
NORWAY (a)	28	2620	2190	83
NETHERLANDS(a)	18	2770	2020	73
BELGIUM (a)	17	2720	1880	69
FRANCE (a)	35	2820	1900	70
POLAND (b)	52	3000	1800	60

(a) BASED ON COMBINED WORKING PARTY ESTIMATES

(b) OSS ESTIMATES

—OWI Photo

Typical Jewish refugee children in Poland.

a level on the average less than the 2,000, and that was Greece. Belgium and the Netherlands are very low on the scale and all the way up the scale, with the exception of Denmark, none of them came up to the average of the 2,000 level.

The second point is brought out in this other chart in which the red bar represents our estimate of the consumption of the farm population, and the yellow bar by non-farm people. And again you can see a wide disparity. The width of these bars represents the population that belongs to the two categories.

The one country that deserves particular comment is Poland. The farm population have been doing very well whereas the non-farm population has been very hard hit. About 50 per cent of the people live on farms. The other half do not. Those who live in the larger cities are particularly bad off, and those who happened to be of Jewish origin are still further handicapped.

This last chart is intended to give us some clue as to the commodity composition of the diet. It is not just calories but what kind of food these people are eating.

The solid red bar indicates the number of calories obtained from grain; the cross-hatch red calories from beets. Those are very good foods in moderation but you have a larger proportion in your diet and they become inferior to a better diet. The blue represents meat; the yellow bar represents dairy products not including butter, because we have put butter with fats and oils represented by green; the

—OWI Photo

Greek refugee children lining up for food at Moses Well, Egypt.

purple or violet represents sugar and the bar at the end represents miscellaneous commodities.

The gist of the story from this chart is a contrast between the proportion that we get. Look at the length of the red bar in the United States with the other colors and compare that with the bars down here—the amount of red compared with the other colors. In this country we get just about one-third of our total calories from grain and beets; two-thirds from the other kind of food.

You could almost say generally for these European countries that they get two-thirds from grain and beets and only one-third from meat, dairy products, sugar, fats and oils.

It appears in Jugoslavia—there you have a most extreme case of a long red bar with very small parts of other things. In France, in Netherlands and in Belgium, 60 to 65 per cent from grain and beets. That represents an extreme deterioration in the diet, aside from simple calory content.

A tight over-all food situation, both qualitatively in terms of calories and quantitatively, has touched some localities with particular force. Cities like Marseille, Athens, Rome, large European population centers, far from producing are reducing, and there will be many other trouble spots in Holland.

Let me give you this broad thought in closing: This background picture that I have tried to give you is based on what we

tried to find out about the year 1943–44. Work is still going on to try to get that picture up to date, and if we look ahead instead of seeing better conditions we have to prepare to see worse conditions.

The process of liberation is a violent process. The returning governments are suffering from terrific handicaps. Needs were met in the past four years by strict, rigid controls. There is in the situation no slack to be taken up. Liberation results in destruction and disorganization. Faced with those two things I think we would be entirely wrong to assume we will have better conditions to deal with. We will have worse.

Lastly, we must realize those people in Europe are looking to us and our allies to help them in this situation. Just as we have been ignorant about conditions in Europe, they have been cut off from the food situation in the rest of the world and they imagined that all the countries outside of Europe had plenty of food. They have been encouraged to believe that by things that we have said and by promises in our propaganda. It seems to be unlikely that we can possibly fulfill completely their expectations.

I think it will be tremendously important that this country should make a real effort to contribute some of the food that is going to be so desperately needed in Europe in the next year.

"All in all the food outlook, while not as happy, in spots, as many of us might wish for, is certainly far from being a cause for grave alarm."

Prospective Civilian Food Supplies in 1945

By Dr. William C. Ockey

Chief, Civilian Food Requirements Branch
Office of Distribution, War Food Administration

—Farm Security Administration (Rothstein)

The American farmer has done a job of war production so incredible as to defy reasonable explanation.

THE GREAT concentration of population in N. Y. City and N. Y. State makes the question of food, its supply and its distribution an extremely vital subject.

On this matter of food, I want to review a little past performance and then hazard a few opinions, based on facts, as to what is coming.

I believe it is reasonably well recognized that the United States is the best fed of any warring nations. In quantity, in quality and in variety our civil population is far and away better off than the civilians of other nations at war. It is also true that the American armed forces are the best fed fighting men in the world.

Comparing what our population eats with the diets of say, England or Russia, you'll find great differences—with the advantages entirely in our favor. England eats efficiently—but monotonously, so far as her civil population is con-

eerned. Russians—many times and many plaees—have simply failed to eat, though there is some improvement under way at present.

In this country our people have actually had MORE to eat, during the war years, than they had during the pre-war years 1935–39. I recognize, as you do, that on some tables, during the war years, thiek juicy steaks have been less frequent in appearance. I realize that butter has not appeared with such gay abandon as it often appeared in pre-war years. But, when you eonsider the matter soberly, all of us reeognize that the things we have liked to eall "shortages" have been largely inconvenienees rather than shortages that seriously affected our food supply.

More Food During War

As I stated, the population has had MORE food during the war years—than during the immediate pre-war years: more food by about seven per cent. Nor has QUANTITY alone shown an improvement. Our people have been getting and using better food, insofar as balance is eoneerned. Similarly, very great improvement in the amount and kinds of food has been made available to a large segment of the population that had been most lacking in these desirable aids to better living.

These things have taken place despite the fact that about one-fourth of our food production is required for purposes other than feeding civilians. Close to 15 per-eent is needed for armed forces feeding and close to 10 per eent is needed to assist in feeding our fighting allies or for emergeney feeding in liberated areas.

I think that the things I have pointed out will at least give you an idea that not all of the produetion miracles of this war have been achieved in the factories. In this year, 1944, Ameriean agrieultural production is some 35 per eent above what it was in 1935–39. An increase of this magnitude looks big and is big. But when you consider how the increase was achieved, it looks a whale of a lot bigger.

The American farmer has done a job of war produetion that is so incredible as to defy reasonable explanation. Consider these faets. Due to the stern demands of war, vast numbers of former farm boys are in the armed serviees. High industrial wages also drained a eonsiderable amount of manpower from normal farm occupations. The produetion demands of war made it impossible to furnish the usual amount—or an increased amount—of farm maehinery and other desirable farm materials.

So there was the American farmer—extremely short on manpower, short on maehinery which he could not replace—faeed with the problem of inereasing production. Well, the farmer didn't just face the problem—he solved it and upped produetion by 35 per eent. The hours of labor he put in—the ingenuity he exercised—the determination to produce the foods his eountry needed—all of these blended in some magic way to achieve a result that has never been duplieated in the history of agriculture. And that result has meant that you and I and our

soldiers and our allies have had food that would have been unavailable otherwise.

Several favorable factors did operate to help the farmer. For the country as a whole—crop weather, growing weather has been good during the past several years. We have also shifted to more intensive crops—and are reaping the benefits of conservation methods put into practice some years before the war began. These factors have been of very great importance.

1944 Crops Record

The United States experienced a phenomenal crop year in 1942—the best in its history. The year 1943 was a good year. This year of 1944 is, once again, the greatest in American history so far as agricultural production is concerned. Our wheat crop was a record breaker at well above one billion bushels. Our corn crop was far above three billion bushels—and many other crops were at record, or near record levels.

The entire record has been so good that the civil supply situation has been such that no American citizen ever had to go hungry because a shortage of foods existed. Furthermore, no American citizen has ever been forced to live on an inferior diet—so far as available supplies are concerned. I recognize, as you do, that we still have lack of knowledge and poverty with us and that these HAVE denied some people of the amounts and kinds of foods that would be desirable. Even this situation has shown improvement—due to the economic advancement of a considerable percentage of our population.

Even bread has become a more sturdy staff of life—due to the reintroduction of substantial quanties of some of the vitamins and minerals into many flours. An increasing consumption of fruits and vegetables—many of them home produced in victory gardens—has also helped create a better fed America.

No comprehensive statistical analysis of the effects of this better feeding have as yet become available—but somewhat similar studies have been made and do indicate very positive results. Records involving over 100,000 men were kept during 1939–40 with the Civilian Conservation Corps in a mass feeding experiment. It was assumed that the CCC boys were not receiving particularly adequate diets prior to coming into the CCC. When they entered the Corps, they received regular Army food—a high quality, balanced ration. Over a six months period, these 100,000 men showed an average weight gain of more than 11 pounds each—and actually increased about one-half inch in height. An "expected" gain of about two pounds and one-tenth of an inch in height should have been shown—in view of the time and age factors.

This merely indicates that present day feeding—at high levels—can be expected to produce bigger, stronger, healthier, finer Americans.

Thus far, in our food efforts in this war, the Nation has an excellent record. Now, let's take a look toward 1945.

1945 Food Goals

In general, food goals and all agricultural goals during 1945 show a striking likeness to those of 1944. The Nation is again going out for very heavy farm production. I have heard some people ask, "Suppose the war in Europe ends suddenly: wouldn't we then have a tremendous food surplus problem?" A problem of some magnitude COULD occur along that line.

But here is our reasoning in setting high 1945 food goals. First, we don't have any inside information as to when Germany will be beaten. Second, we CAN afford to risk the possibility of some surpluses if Germany should quickly collapse. Third, we CANNOT afford to risk letting American fighters or civilians go hungry because of food goals that were too low.

Even in the event of a quick German defeat—very considerable quantities of food will still be required for American fighters and allies. We can't demobilize or transfer forces overnight — and fighting men must be well fed, regularly.

In discussing 1945 prospects, I first want to call your attention to three big "gambles"—that cannot be avoided and that can make any discussion of future crops wrong.

The first and most important gamble is weather. It is the perpetual friend or foe of the farmer —and no man can yet predict what it will be over any given period of more than a few days. Bad weather over the country can make for short crops all along the line. To a lesser extent the same thing is true of unusual visitations of insect pests or diseases. What will happen with these three agricultural hazards, I cannot predict. The goals are based on average conditions. They should be achieved with a little to spare if growing conditions are better than average. And they cannot be achieved if growing conditions are considerably worse than average.

The best estimate that can now be made is that, on the whole, we should have the food we require in 1945. That doesn't mean that we will be free of problems—or temporary shortages—or perhaps lasting shortages in a few items.

Less Meat Looms

As the Office of Distribution sees it, there will probably be a little less meat available during the coming year than during this one. However, the amount that will be available is considerably above minimum nutritional requirements. The outlook is for 135 to 140 pounds for the year—as against 140 to 145 pounds in 1944. Both of these figures exceed 1935–39 averages. During 1944, our meat animal population got a little out of balance with other factors—causing heavy slaughtering to restore the balance. It looks like less pork in 1945 and perhaps a little more beef—perhaps better quality beef.

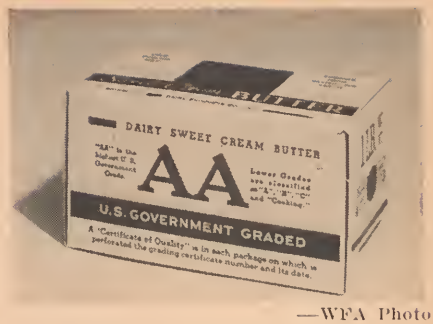
About poultry—well that is a very warm subject around here just now. The poultry outlook for New York and vicinity for an indefinite period does not look too

bright. I'm going to review, briefly, the reasons.

Quite recently, the Army (acting as buyer for all armed services) came to the War Food Administration and explained that the Army was many millions of pounds BEHIND in its requirements of chicken for fighting men. There has been an increasing demand for chicken. Men back from the fronts, men in hospitals want chicken. It reminds them of home and lets them forget—at least for a time—the tensions of war. The Army explained that chicken was a prime morale food—and fighters had to have it.

As a consequence, the War Food Administration put a chicken set-aside order into effect on December 11. This order provides that all chickens grown in several very important producing areas must first be offered to the Army. One of these areas is the Del-Mar-Va peninsula—which provides New York City and adjacent cities with a large portion of its fryers and broilers. That means that this type of chicken is going to be scarce around here. Each person will have to make a private decision as to whether chicken is more important to fighting men or to himself. As we see it, Chicken is for Fighters First. And I believe this decision will be backed up by the great majority of New Yorkers.

This set-aside order does not affect ducks, geese, guineas or squabs. And, as you may know, turkey restrictions have been modified considerably in the past few weeks.



—WFA Photo

Butter will continue scarce.

Eggs Plentiful

Now, passing from the chicken to the egg—or preferably, to eggs, plural. From the point of view of the number available for your purchase during 1945, the situation is very good. Every indication points to the fact that there will be plenty of eggs—and I do mean PLENTY. The American hen has done quite a job in egg production. Back 20 or 25 years ago, a hen was content to lay an average of about 85 eggs per year. Now, she's up to 112. Selective breeding, better feeding and better control of diseases and pests have been responsible for this.

Frankly, there is likely to be an over-supply of eggs, at least during the first half of the coming year. We plan to do everything we can to increase their use during the Lenten season—which begins, Ash Wednesday, February 14, and ends with Easter, April 1. We're rather well caught up on our overseas needs of dried eggs and a program of flock culling is under way to put the chicken-egg situation more nearly in balance again.

Your milk supply—fluid milk—

should be adequate during the approaching year—but many products manufactured from milk will not be plentiful for civilians. Evaporated milk is a prime Army item—and will be in relatively short supply. The same thing goes for cheese and powdered whole milk. Dried skim milk should be relatively plentiful.

Butter and Milk

Butter will continue as a scarce item because, for one thing, war pressures will divert some milk that might normally be used for butter making to other purposes. You might even say that you can't drink your milk and spread it too.

Supplies of milk, in general, will improve seasonally during the next few months. November is the annual low point.

Fats and Oils

Fats and oils will not be in quite such generous supply in 1945, largely due to decreased hog slaughterings and a consequent drop of 800,000,000 pounds in lard and rendered pork fat. An intensification of the fat salvage drive becomes increasingly important here to make up the shortage. Already, a war food order has been issued that prohibits the use of lard or rendered pork fat in soap manufacture. As you perhaps recall, a vital factor in the relative scarcity of fats and oils is that Japan, holding most of the Philippines and the East Indies, blocks us out of normal imports amounting to about one billion pounds.

Other Food Items

Fruits and vegetables—though not expected to be quite so profuse as during 1944 should be ample. That applies most particularly to FRESH fruits and vegetables. Canned foods in this line will not be on a totally unrestricted basis. Only about two-thirds as much canned fruit will be available as was used during 1935–39 by civilians. This scarcity will be largely offset by the greatly increased consumption and availability of canned fruit JUICES.

—U. S. Army Photo

Our soldiers have been well fed.

Food grains—wheat, rye, corn, rice and others do not constitute any particular worry. We have good supplies of the grains—in sharp contrast with the situation during the first World War. Thus far there have been no "wheatless" days—and none are contemplated.

Sugar will not be plentiful and there is not much chance of immediate improvement. While domestic cane and beet sugar goals are up over last year, they cannot be radically increased because labor is a limiting factor. While more sugar is available from off-shore areas, our present supply lines to Europe and the Pacific are demanding all the ships that might otherwise bring in sugar. Here,

too, it must be remembered that Japan blocks off a considerable amount of the normal world supply in the Philippines and in Java.

All in all, the food outlook—while not as happy, in spots, as many of us might wish for—is certainly far from being a cause for grave alarm. Our soldiers have been well fed, our civilians have been well fed and we have been able to make substantial food contributions to our allies. These things must continue.

Looking farther afield than the year 1945, three developments seem especially significant to me as affecting food. First, are Government food sales. At the end of the last war, these sales were largely a matter of dumping and even opening up what might be called side-walk grocery stores. Normal channels of manufacture and of distribution were all but paralyzed by some of these activities. Some speculators probably made fortunes—and practically everybody else was harmed by the food disposals.

This condition is not going to be allowed to happen when peace comes at the end of this war. We have the mistakes of the past war to guard against and to guide us. We are also acquiring experience right now with relatively substantial sales of foods which have become surplus to the war effort at the moment. The War Food Administration has trimmed its own food inventory very substantially—and doubled its stock turnover. These facts mean smaller stocks when peace comes. We have also worked out sales processes and other disposal methods that we believe will cause a minimum of trade and economic dislocation when war stocks must be disposed of with the coming of peace.

School Lunch Program

Another significant development in the American food picture has been the expansion of the school lunch program. Federal participation amounts to $50,000,000—and makes possible the establishment and serving of millions of meals to the youngsters of America. These meals—for which the Federal Government pays part—are nutritionally efficient meals and afford a very large number of children the opportunity of getting not only the quantity—but the variety of foods they require to progress toward sturdy young manhood and young womanhood.

The immediate effect of these school lunches on the youngsters is often quite dramatic in terms of weight gains, lessened sickness, improved school attendance and better marks. A collateral effect of the school lunches may be as important—or even more important than the direct effect of the lunches to the children.

It has been found that the children pick up a tremendous amount of nutritional knowledge as a result of lunches they are fed at school. They take this new knowledge home—and in a great number of cases improve the family diets by insisting on foods they receive at school—and which they have been taught are good for them—but lacking on home tables.

This type of up-grading in home meals has been especially bene-

—WFA Photo

These Maple Heights, Ohio, school children enjoy lunches in a program assisted by the War Food Administration.

ficial in sections that were addicted to a monotonous and inefficient diet. Fresh fruits and vegetables—properly prepared—have appeared on long forgotten tables; milk has become a frequent home visitor in homes where it was formerly missing; meats other than "sow belly" have appeared to give greater taste appeal and nutritional efficiency. The youngsters have been learning quite a lesson—and then pounding it into the heads of their slightly bewildered parents.

Industrial Feeding

A third very healthy food development is the extension—and great improvement in—industrial feeding. Workers who are producing America's gigantic flow of war materials require efficient feeding to do the most efficient work. A constantly increasing number of factories have recognized this and have recognized the inadequacy of food sources near the plant.

Many thousands of public eating places have been established within plants to see that workers obtained good food at reasonable prices. Industries that have embraced this practice are enthusiastic as to its results. Here too, absenteeism and sickness and listlessness have been sharply cut through the medium of a good lunch—or a good dinner—or whatever meal the industrial worker could not get effectively at home or elsewhere.

Some of the industrial feeding establishments serve many thousands of meals per day. Mare Island Navy Yard, for example, serves in excess of 40,000 meals daily. Other smaller plants, may even number their servings in the

dozens—instead of thousands. But, throughout the country, the immediate effect of greatly expanded and improved industrial feeding has been excellent.

And, as with the school lunch program, collateral effects have been good. Workers learn more about food—they learn more about how much better good food makes them feel—and they bring this new knowledge into the home with a consequent improvement in home diets.

No definite evaluation in terms of dollars or man hours is, perhaps, possible, with either the school lunch program or the industrial feeding program. Certainly, however, both of them have contributed measurably to a more vital America today—and tomorrow. The Office of Distribution has been a constant advisor and contributor with both of these developments and we feel that present benefits—though important—represent only fractionally the benefits that may be expected as the school lunch and industrial feeding ideas grow and expand.

Today—when energies are bent toward supplying necessary food for a world at war—it is not too early to think and plan for coming days of peace. That is what the Office of Distribution is doing. Its war job comes first—but concurrent with the war activities are the wholly necessary plans that will contribute toward a peace with victory rather than a military triumph that finds us unprepared to cope with a post-war world.

"We cannot be fully happy in our abundance if we know other people are hungry and not happy."

Food in New York City and Elsewhere

By F. H. La Guardia

Mayor of the City of New York

SENATOR, I have appeared at your hearings, always so constructive, as I believe you have made a very useful contribution to one of the most important problems now concerning the American people. I have just seen your "Food in War and Peace." I have just put my hands on it this moment. I glanced through it. I note that you have hearings on the high spots of this problem, and with your permission I would like to follow your subjects here which I feel will cover everything that I might be able to contribute.

You start off with the subject "This Hungry World." Now ordinarily the average family in our country while sympathetic would not be as closely affected by food conditions in other parts of the world as they are today. There is hunger in many large sections of the world and this is going to increase, reaching the highest point in the first harvest season following the war.

As armies advance in enemy countries, as armies retreat, the destruction of crops is inevitable, following a delay in planting in the following season. In addition to that, war, which everyone knows is destructive, has been drawing upon all the reserve, actual and potential, in more areas and more sections of the world than ever before. There is great need of food in all liberated countries and this will

—French Press

War orphan in France.

increase as greater areas are liberated. Therefore, we must adjust ourselves to demands which we will have to meet, increasing demands of the hungry world that you described in your report.

We are feeling shortages of food now and these shortages will be felt more this coming Winter, Spring and Summer. There is one lesson that must not be ignored and must not be forgotten and one which we will have to meet after the war. We know that production of food has increased in our country. Making due allowance for the demands of the armed forces and for the demands under lend lease, there is still the need of a large

amount of all food commodities. Now, why is that? The answer is that more families are now able to buy the necessary food than ever before. That means that in the past there was a large percentage of our people in some sections of the country and unfortunately in some sections of large cities, that did not have sufficient and proper food.

We must not permit a throwback to that condition when families cannot afford to get sufficient and the proper kind of food. I hope that your Committee will not indulge in any study of so-called surpluses that you will find in the statistics of the past, and if you do that there will be a different approach and a more accurate analysis of these so-called surpluses. There is no one today living who can tell exactly or accurately just what surplus we have had in our country on any given commodity. I know the statisticians will howl when they hear that. If you identify these surpluses or quantities over and above that which the American people were able to purchase, then you have an accurate description and the only way to measure a surplus is to ascertain first what are the normal, natural, probable needs of the people of a given country. Assuming that they have the purchasing power. And then anything above that is surplus.

You take cotton for instance. If all the people in the cotton-growing sections of our country and all the people in the country were properly clad and all the children had the right kind of clothing and all had nice clean white sheets on their beds and nice cotton table cloths on their tables, I believe it would put quite a dent in the so-called surplus of cotton.

Dairy Products "Surplus"

You take dairy products, with which our State is very much concerned. For many years we have had quite a so-called surplus of dairy products. I sat through two tariff bills in the House of Representatives and I heard the cry of despair of the dairy interests putting—high tariffs on cheese, which are most prohibitive, and all sorts of restrictions on dairy products and even milk. I venture to say if all the children of our country had the quantity of milk each day, fresh milk each day, that we want our children to have, and that if all the families would have the butter available to them that we know is an important part of a well balanced diet, we would not have much of a surplus in milk or butter, and surely there wouldn't be enough to create any surplus in cheese.

We can go through all the commodities which we produce in our country and you will find our tronble has been that a large portion of our people have not had the purchasing power to enable them to have proper, sufficient nourishment and it is that which has caused in a great measure a great deal of the surpluses we have or did not know what to do with. So I recommend a study on surpluses in connection with a study on how much butter and clothing and shelter are required for 135,000,000

people based on a decent American standard of living; that kind of standard that we hear about in the discussions of a tariff bill or in the 4th of July orations.

Returning to "This Hungry World," we must be prepared to make sacrifices ourselves and to continue perhaps under war conditions for some time after hostilities cease in order that we may be able to meet our responsibility in aiding other people to re-establish themselves. That is a responsibility, and I do not believe that the American people would be completely happy if they did not do their share in aiding to rehabilitate the people who have suffered so long under such hardship. So I am quite sure that you will find great amounts of food being shipped to all parts of the world for several months after the war ends.

That means that we must be patient and we must adjust ourselves to rather rigid regulation in food distribution, always, of course, under price control. Price control is a component of food regulation. If we did not have price control when food is limited and must be rationed, then a larger percentage of the people would be deprived of the opportunity because prices would soar to levels beyond the ability to purchase. So we must educate, so we must aid in bringing home to all the families of our country the necessity of adjusting the family diet to available food and impress upon the lawmakers the necessity of proper, effective, enforceable regulations in connection with fair and just selling prices.

Impending Food Problems

Food problems for 1944, your next subject in your report, is very closely connected, of course, with your first subject. 1944 is about over so we take that to mean the 1944–1945 food season. We know now that the sugar supply will be very tight for the reasons with which you are all familiar. That means driving home immediately the necessity of sugar conservation and the use of available substitutes such as syrups and honey in baking, particularly industrial baking. People still have a certain fear and when it becomes known through the regular channels of trade that there is shortage in any given commodity, there is always a tendency to go in and buy.

I think that tendency is being reduced somewhat, and as we proceed, in time it should be improved. It is suggested that all the unused coupons for sugar should be invalidated. A great many have accumulated coupons and points on sugar and now are using them. That puts every large family that were compelled to use their coupons currently at a great disadvantage. Retailers are watching that and are doing a fair job in seeking to bring about an equitable distribution of the available supply of sugar among their customers.

Butter will continue to be scarce the coming season. I must stress the necessity of a let-down by modification of existing laws, State law, on the use of oleomargarine. Oleomargarine, as you know and everybody knows, scientifically has all the ingredients and all the nutritious value of butter. I have lived

a great part through the history of the oleomargarine legislation. Oleomargarine was first discovered in Germany or Mayfair and it has been perfected during the course of the last 30 years up to the point that if it is vitified with vitamin A it has every value of butter. Now we have put on our statute books, both Federal and State, various requirements in the manufacture and sale and distribution of oleomargarine. The reason for that, frankly, was to protect the dairy interests in the sale of butter. We are confronted now with the situation of a shortage of butter and we know the value of butter fat and proteins, and therefore should let up on the restrictions for an equal substitute for butter.

I know this would be met with protests from the farmers of our State, farmers of Wisconsin, the farmers of all dairy states. I was confronted with it when I appeared before a Congressional committee considering legislation on this point. We have enforced oleomargarine laws in this State very vigorously. Some 20 years ago, 25 years ago, when I was Deputy Attorney-General of the State, I had the enforcement of the oleomargarine statute in this city, and it was really cruel the way it was enforced, but of course all laws must be enforced. That is what they are there for. And I have had some experience in it. Therefore, I would urge at the coming session of the Legislature something be done so that the sale of and use of oleomargarine could be facilitated temporarily.

You did something for me, for the city recently, during the last session, during one of the very short periods of butter. I told the purchasing commissioner to buy oleomargarine for the penitentiary and he went out and then he came back and he was quite pale. He said, "Oh, Mr. Mayor, unless you insist, I prefer not to do it because I don't want to go to jail." In fact, it was a felony to buy oleomargarine in New York State for any public institution. He was a good commissioner, so I didn't want him to go to jail, so he did not buy oleomargarine.

But the law has been amended, you have amended the law in that respect, and we do buy oleomargarine for the penitentiary, but not for our patients in the hospitals. There is morally psychological effect there. I strongly recommend that.

Meat Still Short

Meat will continue to be tight for some time to come. The consuming public could do a great deal in helping themselves and easing up a very difficult condition that is cropping up in the meat market. Few customers understand the meat situation, and of course it is no fault of theirs, because we have always had such an abundance of meat in our country for those who could afford to buy meat.

There are a great many people in our country who did not eat meat every day, not because they didn't like it, but because they could not afford to buy it. And that created a very abundant market for those who could afford to buy meat. Now that all the people are working, and we hope to keep

them working, we must keep them working, more families are using meat, and the amount consumed is far greater than that consumed before the war.

Now, here in New York City, and I speak for the City only—I suppose the other large cities of New York State are the same—but New York City is the best market and has been for years, of so-called choice meat. As you go West, you will not find the same amount per capita of choice meat consumed in normal times. Now, when we talk about choice meat, it might be said that it is almost a manufactured meat. It is a strange term to use in applying it to live stock. But choice meat is really manufactured. The feeders go out on the plains and buy the animals and bring them in to feeding points like Kansas City and St. Louis.

The feeding industry has developed into an exact science. Just as a manufacturer buys his cloth and makes it into garments. He figures on the price of his cloth, his labor and his overhead and he determines the price of his garment.

So the feeder buys his cattle on the plain, brings them in, knows the price of feed and can ascertain scientifically and he knows accurately that on a given date, using so much feed this animal will gain so many pounds.

What he risks and why it is speculative is that the price of feed may change in the time between his buying and selling period. So when we talk about nice choice meat that has dotted white spots and its fine red color, that meat has been scientifically put on the animal in a certain period with well prepared feed.

In war time when there is such a demand for all kinds of crops, feed becomes scarce and feed becomes expensive and therefore there has been a steady reduction in better cattle and that in all likelihood will continue. The feed situation is a little better now than it was a year ago, so as we go down in utility beef the feeder cattle meat may go out a little bit.

Now utility beef that we are talking so much about is just the kind of beef that people of my age ate when they were children. That is all we had in Arizona. We could not get anything else. And this choice manufactured beef or feeder beef is really a product of the last quarter of a century, being perfected all of the time. Now utility beef is just as wholesome, it is just as good, but you do need to have good teeth and a great deal of this, as you know, can be made up in the treatment of the beef, the cutting and in the cooking. Now I will not bore you with any recipes this morning. I get in trouble every time I do.

But we must adjust ourselves to this utility beef, which is very good and very wholesome and it will be some time before we will have a normal supply of feeder or feeder cattle meat.

That will bring you up now to the present difficulty in the meat distribution system in our country. Our present situation was bound to happen. I predicted it, I think, in one of the hearings here and I have been in constant touch with

the Government, United States Government, and for three years I have been trying to avoid the situation which has come to a head now. And it is very simple.

The Government has put a ceiling price on wholesale meat, and it has had, of course, to put a ceiling price on retail meat. No one would recommend retiring retail ceiling prices. I want to assure you, Senator, if that should happen either in our State law or in the Federal law, prices would soar to unbelievable heights. Let us have no illusions about that. Now the trouble has been that Congress has consistently refused to put a ceiling price on the cattle on the hoof. So that the packers go out and buy and after they buy and slaughter they are compelled to sell under a fixed ceiling price. The large packers are able to adjust differentials because of their enormous quantity and their many ramifications and the use of every part of the animal in by-products. The independent slaughterer, the small slaughter house has not that reserve and therefore very often he buys cattle and has an actual loss on every head.

The Government steps in and pays a subsidy to the packer, varying on the grade of the animal, but that subsidy has not been enough to compensate the independent packers or insuring him against any loss.

Now, instead of seeking to work this out, and they did try to work it out with the Government but were unsuccessful, the black market was created. That meant that it started back from the slaughter house to the retailer. The original packer pays more per head for his cattle than he would receive after he slaughtered and cut the animal. He was able to sell it above ceiling prices because he found a market.

In addition to that up to recently I think it goes into effect or it is going into effect, just a few days ago there was no set aside on any slaughter under 50 heads of cattle a week. That meant that he had all of this kill to sell in the black market at advanced prices. That resulted, of course, in all sorts of combinations to avoid the set aside order. The slaughter house would divide itself into four parts and each slaughter 50 animals if their kill was 200 animals a week. The Government naturally learning of this and watching it in operation then put the set aside order on everything. That meant that he had 40 per cent of his kill every week to dispose of in the channels of the black market, and that caused this immediate protest.

The protest started with the independent slaughterers. Now, our retailers were in this fix. They could get a certain amount of meat at ceiling prices, but not enough to meet the demands of the customers, and therefore they say "we are compelled to go into the black market and pay more than ceiling prices." Our answer to that was: "Cooperate with us. Give us the information. We will go after the wholesaler. We will go after the slaughter house and we will get this meat down because there is just so many heads of cattle to slaughter every week and if it does not go into one source it will go

into the other." The rejoinder to that was: "If we do that we can't get meat." Then we will say: "We guarantee to get you meat." They say: "We are not sure."

Price Ceilings

We have had several convictions for violations on the part of wholesalers for selling above ceiling prices, but not enough. Now you will ask me why the Department of Markets of the City can't enforce the ceiling price against the retailer; "Why are you so helpless and need the cooperation of the retailer to enforce it against the wholesaler?"

The answer is very simple. The retailer must sell in the open. His counter is there; his meat is exposed; his price list is there and his labels are there and you make a purchase in the open. When he buys he is quite secretive. Even the established meat markets for wholesale meat, the butcher goes to market in the early hours of the morning and he is received by the buyer and he goes into that refrigerator alone and nobody else can get in there. There is just one buyer at a time. That is a custom that has been followed for years in the wholesale meat market and no one knows what goes on there.

Without some evidence from the retailer, it is extremely difficult to get convictions of the wholesalers, and we worked hard and long and industrially on that, and we still are following it.

What I have been seeking to get for the past three years is a subsidy to make up the differential in the retail price of meat and the cost of the animal on the hoof. I have appeared at least six times before Congressional committees pleading backing for that. I gave notice that this situation would happen. But as you know, Congress always rejected the subsidy plan. If all control is taken off of meat and just rationing left, then I warn you now that the prices of meat will become prohibitive. It is no answer to say that it will take care of itself. It just won't. So we are doing what we can now to have the condition recognized.

I am very sorry that our retailers have been badly advised, because they had many friends trying to help them. I think I spent more time on that than any other commodity, because of this unusual condition. But don't you see, as long as we have a ceiling price law, as long as we have curbing, there is nothing I can do. I can not comply with any request to pull the inspectors out. I must protect the consumers. It would be demoralizing, and it always is, to ignore the enforcing of any law.

There are suggestions that perhaps the price poster should not be conspicuously posted. What is the price poster for? It is for the protection of the consumer.

The same as to grading. I have just talked about utility and choice meat. As you know, the Government compels meat to be graded. A utility steak might be 14 or 15 cents a pound. Then our inspectors go in and say, "Steak? What is it?" "Choice meat." "Fine. How much?" "55 cents." "Let me look at it." They look and find it is not choice, it is utility being

—USDA Photo (Forsythe)

Grapefruit juice served in a New York City parochial school to supplement children's inadequate diets, in a school lunch program sponsored by federal Department of Agriculture.

sold as choice. It is a violation, of course. 14 or 15 cents a pound for two or three pounds is quite an item at this time to a family. We have to enforce the law.

This matter will come before the Legislature just as sure as we are here today. They will seek to repeal the State law. Of course, if you do repeal it, we will then not be able to enforce the law, the Federal courts cannot take care of it, and the responsibility will be with the Legislature if they weaken the enforcement of Federal regulations pertaining to food. It should not be done at this time.

I am in constant touch with the War Food Administrator, and the Office of Price Administration, the Department of Agriculture, the War Mobilization Office, and we are doing all we can. I think the problem is easily susceptible to fair adjustment, if we can get the co-operation, and I am quite sure we can, of the retailers.

School Lunches

Your next problem is school lunches, and I am very happy you have this here. Senator, we need some slight amendments to the existing law. There seems to be a conflict of jurisdiction now between the Department of Welfare and the Department of Education.

The Federal Government is most generous in its allocation of funds, and we are now able to give a well balanced school lunch for ten cents. The cost of preparation and labor, distribution and services has increased a great deal, as you can readily understand.

In the old days, we were doing it under WPA, and it was quite different then than it is now, in the personnel cost.

Personally, I believe it belongs in the Department of Education. We have had it there for eight years under WPA. Under the State Welfare Law, it would seem in order to get our contribution from the State, we have to operate through the Department of Welfare, and that throws two departments into it. I need not tell you the schools are always very jealous of their school activities, and it would facilitate matters a great deal if you would provide for the administration of school lunches entirely in the Department of Education, and provide a State contribution direct to that source.

It is a success. I just cannot imagine that we will ever have to give it up. I hope the Federal Government will continue its interest and continue its very generous contribution. Without it, it simply would be impossible, and if the committee has time, I would like to have a visit to our central kitchen. It is quite an establishment. We prepare 53,000 lunches there a day. In the time of the WPA, when we had several hundred thousand families on relief, we went as high as 160,000 lunches a day. But 53,000 constitutes quite a kitchen, and you will be interested to see it in operation.

—French Press

French girl suffering from malnutrition.

That is the only suggestion I have to make on school lunches.

Then you come to our daily bread, and you know, I think when the appeal was put in the Lord's Prayer, "Give us our daily bread," that God Almighty intended just that. I don't think it is a metaphor, and it says "Give us this day our daily bread," and not "my daily bread," but bread for everybody, and bread meant food. That brings us back to your first subject of a hungry world.

Food Distribution

You know God Almighty put enough food on this world for all the people. But perhaps in the haste of the seven-day week, it was not distributed in such manner as not to create problems. But the food is here. There is enough for all the people of the world. But it has so happened in nations that some have had too much and others have not had enough.

And it so happened in the world, that some nations have had too much and others have not had enough.

I think it is a mandate of God Almighty that His creatures should help in bringing about a distribution of His given wealth to the world. For some reason, He has made us the trustees of an abundant supply. He has kept our continent in reserve for centuries and centuries, and has brought here people from all over the globe, and we have grown into a mighty nation. With all of this abundance, we wasted so much in the past; we must not waste any more.

And we have the genius to bring about a proper system of life in our country to provide properly for all willing workers, those who contribute to the community one way or the other sufficient food for themselves and their families, sufficient for the little child to grow healthy, strong and be happy, and in addition to that, to join with other people all over the world in exchanging that of which we have too much with the things that they have too much of, and to tell the world that we can be not fully happy in our abundance if we know other people are hungry and not happy.

". . . those nearest the source of food production eat first and best."

The Outlook for New York's 1945 Milk Supply

By Fred H. Sexauer

President, Dairymen's League Co-Operative Association, Inc.

—USDA Photo (Les White)

The American farmer, his children and his children's children have a big stake in the future of democracy.

New York City is and has been more fortunate than most cities in the East in regard to its milk supply. It has at all times had its full quota. Its supply has at all times come from its own approved sources. It has had an adequate reserve at most times to care for any contingencies.

At no time has the New York City consumer found herself without a reasonable supply. At no time has the consumer of New York City had a less supply of milk than her cousin in Des Moines, Chicago, Cincinnati or other Midwestern cities.

This has not been true of any other food which was less in supply than the total needed production. Butter and meat, both beef and pork, have appeared on the menus and in the shops of the Middle West when the shelves here were bare.

The full quota of milk has been

available here from New York approved, regular sources when neighboring cities were scouring the country for supplies, many of which were unapproved by their own boards of health, even in some cases going to unapproved manufacturing sources for them.

There is a reason and a very sound one for this apparent comfortable feeling which New York City consumers enjoy in this respect. There is an axiom regarding food supplies which runs something like this—those nearest the source of food production eat first and best. The most rigid regulation and the most stringent enforcement penalties do not force people to give up needed food supplies. The Italian and French farm people, and I suspect their friends, under Nazi tyranny, succeeded in hoarding food for their own use. I am told that one of the pleasures of those who used mine detectors in France and Italy was that the mine detectors picked up the metal hoops on the buried wine casks.

The hog farmer fills his pork barrel before hogs go to market. His relatives get pork before non-relatives do. Pork finds its way to the village before pork goes to the packing plant. The packing plant city in the hog country gets hogs at ceiling prices before the non-packing plant city. The non-packing plant city in the hog country gets pork before it is shipped East. New York State gets what is left and the Northeast gets even less.

That statement is not criticism of regulation. It is merely recognition of human nature. It is exactly the same human nature which compels a mother to care for her own family before caring for a neighbor. I believe it was Mark Twain who said, "There is a lot of human nature in all of us."

New York reaches out tremendous distances for its food supplies —to Florida and California for its oranges—to Texas and Arizona for other fruits—to the Middle and Far West for its meat—to the South and West for its canned vegetables—to the country over for its eggs, butter and cheese.

Milk Supply Adequate

One commodity sufficient for its needs is produced within a relatively short distance. That commodity is milk. It is the only commodity of which, in short production or long production seasons, New York City receives day after day, with clock-like regularity, its full supply and in regard to which it stands in a preferred position. New York City occupies the same relative position, so far as fluid milk produced here is concerned, that Des Moines does in regard to hogs. It has first call on an adequate supply of milk produced nearby and produced for this market.

Of course this supply is subject to demands of the armed forces, just as are pork and beef. But upon whatever is left after that demand, New York markets have and should have first call.

This has been no accident. This city and surrounding cities could have depended upon the Midwest for parts of their supplies and then found that the expanding demands of Chicago, Cleveland and other Western cities had eaten into

those approved supplies, forcing New York to accept the poorer quality, less carefully produced supplies, just as New York has had to accept short supplies of the better cuts of meat, bacon and many other food products.

For 25 years the New York City administration has guarded the New York milk supply as to quality and has pursued a sound policy of maintaining a sufficient, adequate and what has seemed at times like an unsound surplus of approved milk available.

Farmers of this area under the protection of these policies of New York City have shared among themselves, at first voluntarily, and later under the Milk Marketing Agreement program, the burden of whatever cost there was in producing any excess supplies over the actual momentary needs of the City.

The combination of these two policies resulted in:

1. Maintenance of adequate production in the nearby production area;

2. Providing full quota of New York approved milk for New York consumers;

3. Providing some additional supplies for other neighboring cities which were not so far-sighted, during seasons when New York did not need them; and

4. Assuring New York City of one commodity on which it had first call because the source of production was just outside its gates.

No other major city of the Northeast has enjoyed as consistent and constant a supply of milk, completely, continuously inspected from sources which have been maintained and inspected for a long term of years. New York City's milk supply during these war years has not been a substitute supply, an emergency supply or a temporary supply. Consistent policy, long-planning, and a constructive attitude have marked New York City's past quarter century in regard to milk. Dairy farmers' unshakeable belief that, "To have enough there must always be a surplus," and their determination that, "Any necessary surplus must not destroy the farmers who produce it," have likewise seen sound.

It has worked to the financial benefits of farmers. It has placed New York City consumers in a preferred position so far as milk supplies during wartime are concerned.

The present milk situation for New York seems extraordinarily good. Our responsibility is to look far enough ahead to keep it so. Milk production is not turned off and on like water in the spigot. The source of milk production is controlled by biological rather than mechanical factors. No one has yet devised a method of speeding them up.

We must, therefore, continuously look ahead. If we predict a calamity and successfully mobilize forces to prevent it, we are called calamity howlers and are proven, by the success of our own acts, to be wrong. If we say nothing and calamity comes, we are derelict in our duty. If we do not do our duty, we are wrong. If we do our duty,

we are proven wrong. So, to be right we must be wrong.

Last year's situation was bad. Many things were done to improve it. Today, except for butter and cheese, the milk situation for New York looks pretty good. Can it be kept that way?

Most people think the trend is always in the direction of present conditions. For instance, last year the market was short, so people thought it was going to be shorter. This year the market is easier, so people think it is going to be still easier. When it is short they look for factors causing the shortage and try to correct them. When it is easy they forget their problems. There are too many other things of interest.

Review of Past Year

In November of 1943, milk production in the New York milkshed had dropped 15 per cent below the previous November. The demand for milk was rising and the market was so short of fluid milk that supplies had to be allocated between dealers who did not control their own sources of supply in the country. Prices in other markets afforded so much higher returns that much of the milk was shipped to other cities. The New York pool had lost 16 plants to other markets. There were 3,500 fewer producers delivering to the pool.

This decline in production, as compared with the same months of the previous year, continued through the early months of 1944. Federal authorities became so alarmed at the seriousness of the situation that in April 1944 they announced subsidy payments to farmers for a year in advance, with much higher payments for the Winter months. In August an additional 10¢ per hundredweight was granted because of drought.

November 1944 milk production was more than 10 per cent above November 1943. While the demand for milk is still running higher than it was last year, not so much milk from the New York milkshed is going to outside markets. The New York pool has lost four plants during the year and 1,719 producers, but those producers remaining in the pool have increased the size of their herds. Instead of allocating milk and cream supplies, the Market Agent for New York City and for up-State New York markets has announced a higher quota on milk and cream sales by handlers. National stocks of dairy products with the exception of butter and cheese are in better supply.

Why Supply Is Greater

There are a number of reasons why the milk supply situation has improved so materially within the period of a year. I will mention some of them here.

1. **Weather.** In milk production weather is a big factor. It controls the amount of grain and hay produced for feed. It controls the condition of pastures. Extreme cold or stormy weather can affect the amount of milk produced by cows. This year we have been particularly fortunate in having good weather. Favorable weather provided ideal growing conditions for

ARMY MEDICAL
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grain. The early hay crop was of good quality, and while there was a drought in the early fall that killed much of the second cutting of hay, late rains brought back the pastures in most sections of the milkshed and the delayed frosts both here and in the West enabled farmers to get large grain crops into the barn.

This was in sharp contrast to the previous year when spring rains prevented farmers from getting their seeds into the ground. The oats crop, particularly, was ruined in this section of the country. Much corn was lost in the West and all of the soybean crop could not be harvested.

2. **Feed Supplies.** The total feed supply in the United States during the 1944–45 season will be about 1 per cent below the 1943–44 supply. With fewer numbers of livestock on farms, however, the 1944–45 feed-grain supply per animal unit on farms may be from 13 to 15 per cent larger than in the previous season. Production of corn for grain from the 1944 crop is estimated at 2,850 million bushels, or about 90 million bushels larger than in 1943. The production of other grains was high, but there was a lower than usual carry-over of grain from last year.

Production of feed grains in the North Atlantic States has been somewhat larger this year than in 1943. Supplies of feed grains in the area for the 1944–45 feeding year, including carry-over stocks and locally produced feed grain, are 11 per cent larger than in 1943–44. Reductions are taking place in the number of grain-consuming livestock in the region, and the 1944–45 supply of feed grains per animal unit on farms probably will be materially larger than in 1943–44.

Supplies of hay in the North Atlantic States, however, are 13 per cent below last year. Reductions taking place in livestock numbers will not materially reduce the number of hay-consuming animals on farms, and consequently the supply of hay per hay-consuming animal unit on farms will be smaller than in 1943–44. Dairymen will have to feed more grain to take the place of nutrients supplied by hay. It is expected that livestock men and poultrymen in the North Atlantic States will be able to obtain about the same or larger quantities of feedstuffs and mixed feeds as in 1943–44.

3. **Cow Numbers.** In New York State, on January 1, 1943, there had been a decrease from the previous year in the number of cows kept on farms. The average number of cows on farms in the State in 1944 are estimated to be about 2 per cent higher than in 1943. It is expected that there will not be much change in this figure for 1945, but producers have been asked for a further increase of two per cent in the number of cows.

4. **Labor.** While there has been a decrease in the number of persons employed on farms in the North Atlantic States this year, in contrast with the rest of the country there has been an increase in the number of hired workers. This has been due in part to a sounder

plan for deferments of agricultural workers in this section.

Wages have continued to rise, however. Farm wages without board rose from $96.50 per month on October 1, 1943 to $110 per month on October 1, 1944, an increase of 14 per cent. There had been an increase of 14 per cent in the previous year. This has added heavily to the cost of milk production.

5. **Regulations and Restrictions.** During the year there has been some relaxation of regulations and restrictions imposed upon farmers. Useless regulations and restrictions, added to the other hardships brought on by the war, hampered the farmer in getting maximum production. The fact that the past year was an election year may have helped in lifting some of these burdens.

6. **Equipment.** The War Production Board has relaxed its limitation on the sale of farm machinery and dairy production supplies so that dairy producers have been able to buy more equipment to replace the hired labor that he has been unable to procure.

7. **Returns.** Because of increased returns for their milk, producers have been able to purchase more grain for feed. They have been able to feed this grain at the highest rates on record. They have been able to hire more labor, even at the much higher wages. They have been able to purchase more equipment and supplies when they were made available. Without increased returns, the improved situation in milk production would not have been possible. Dairymen in the milkshed have received an average increase of 65¢ per hundredweight in the first 10 months of 1944 as compared with the first 10 months of 1943. This increased return has helped to defray an average increase of 11 per cent in the cost of producing milk.

Protection Measures

To maintain an adequate supply of milk for New York markets and for war purposes, there are a number of things necessary.

1. **Protection of the Milkshed.** Dairymen must be assured of a market for their milk. Producers in this milkshed have invested millions of dollars in order to be able to give this market a continuous supply of the best milk in the world. They have been able to do this because they have had an assured market. Threats of exclusion from the market, the importation of Western cream and discussions of opening the market for the sale of reconstituted milk destroy confidence in future participation.

If producers cannot feel that their market will be saved for them, they will take this opportunity to get out of production while prices for cows, farms, equipment and labor are high and while they can realize a good price for their investment, instead of planning for full production.

2. **Sound returns.** Sound returns are necessary for the maintenance of milk production. At the present time, more than 20 per cent of the price to producers for milk delivered in the New York

milkshed is composed of subsidy payments. These subsidy payments are not promised beyond March 1945. This means that unless action is taken soon by the Federal Government, at least 20 per cent of the income of dairymen in this milkshed will be wiped out overnight. It is for this reason that dairymen have fought subsidy payments so consistently. They have asked that they be paid a price for milk that would reflect the added costs which they have been paying. Returns must be ample for heavy feeding, for high wage rates, for other inflated production costs.

Sound returns for milk mean prices that have the proper long-time relationship with other agricultural products, particularly the prices of corn and hogs. Prices tend to level production. If corn or other feed prices rise out of proportion with prices for milk, milk production drops since producers cannot afford to purchase the feed. If hog prices rise until the price of hogs is out of line with the price for milk, the farmers who raise hogs can bid more for the available feed supply than can milk producers.

This price relationship holds between different sections of the country. The price level for milk in the East must be higher than price levels for the Midwest. This is true because production costs are higher. Northeastern dairymen must purchase the feed supplies which the Midwestern dairyman can raise. To enable the Eastern milk producer to buy the grain raised by the Midwestern farmer, there must be a sufficient differential in prices.

3. A Fair Share of all Farm Income for Northeastern Farmers. If agriculture in the Northeast, and particularly milk production, is to survive, income to these producers must rise with that of the Nation as a whole. This has not been true during the period of the present war. Cash income from farm marketings in the United States, including Government payments, has risen 145 per cent since 1938. In the nine North Atlantic States, cash farm income rose 99 per cent during this period, and in New York State 99 per cent. Compare this with the East North Central States, which include with others the dairy state of Wisconsin, where cash income from farm marketings rose 191 per cent.

Bringing this to a more recent comparison, for the first 10 months of 1944 the increase in cash income from farm marketings in the United States (Government payments not included) increased eight per cent over the same period in 1943. In the North Atlantic States and in New York State this increase was five per cent. In the East North Central States, the increase was eight per cent.

Producers in this milkshed have overcome tremendous obstacles to increase New York's milk supply during the past year. With an assured market for their milk and ample returns for their product, they will leave no stone unturned to provide New York markets with milk during the coming year.

"We who are in OPA . . . try to do our best with the resources at our command."

The Black Market in Meat

By Paul L. Ross

Regional II Enforcement Executive, Office of Price Administration

—Sam Andre ('Pic') Photo

The black market in meat and in poultry has taxed the resources of enforcement agencies and has robbed the American housewife of food to which she has a right.

VERY frankly we have been asked to talk about the problem in the black market in meat as if that problem was isolated in the problems that we have in dealing with black markets in many other foods.

Most particularly is the problem in meat tied up with the problem in poultry. When the housewife cannot buy meat she tries to buy poultry and when she cannot buy poultry she is in a good deal of a quandary because most of us in this country have been accustomed to eating both meat and poultry.

However, we must also consider that the black market in meat is not entirely a local problem. It is not a problem peculiar to the city of New York, the State of New York or to Region II—that is the Middle Atlantic States. As a matter of fact, what happens in Chicago and Omaha and St. Louis affects conditions in New York.

Many explanations have been made for the black market. Some people have blamed the consumers; some have blamed the retailers, and some have blamed the wholesalers and the slaughterers. We recognize from our experience that all of these three groups in our population bear some part of the blame. However, I should like to confine myself in my remarks to dealing with the problem of the slaughterers and the wholesalers, and what has been done in an effort to stamp out the black market, where it begins, at the point of slaughter and the wholesale level.

Much has been made in recent days of the fact that there is no price, no ceiling price on livestock on the hoof. I think the Office of Price Administration has been on record for some time and Mr. Bowles (Chester Bowles, OPA Administrator—Editor), I noticed in this morning's press which I read on the train from Pittsburgh, has again requested Judge Vinson for a ceiling price for livestock on the hoof. However, we have not been entirely without some help from Judge Vinson, the War Food Administration and other Government agencies with regard to the attack on the black markets. Most of you are familiar with the meat subsidy program which was an effort to deal with the problem in the absence of ceilings on livestock.

Now the meat subsidy program is known as the Vinson Stabilization range program. That is, if a purchaser of live cattle buys at not less than a certain price nor more than a maximum price he may apply for subsidies on the aggregate purchase of cattle he has made and the Government allows him a certain amount of subsidies depending on the particular grade of cattle bought.

However, we find that many of the slaughterers have been buying cattle at prices above the Vinson range and therefore in order to dispose of the dressed beef sold it at over the ceiling. Now, some beef slaughterers in the New York area state that they have been forced into terrible losses when they sell beef at OPA ceilings because their live cattle cost them substantially higher than the maximum in the Vinson stabilization range. There is no denying that such slaughterers do incur very substantial losses when they insist on buying cattle considerably above the maximum stabilization range. Information available to us indicates that the beef industry as a whole is not incurring these heavy losses because on an average basis over the country beef slaughterers are buying their cattle substantially below the maximum of the stabilization range.

Costs in New York

Many of the New York slaughterers have such high cattle costs because they persist in buying and slaughtering chiefly good and choice cattle and selling it to particular classes of customers. These grades of cattle are extremely scarce and have been selling in many markets at prices above the maximum of the Vincent stabilization range, while at the same time commercial and lower grade cattle have been selling substantially below the maximum of the stabiliza-

tion range and frequently have been selling in volume below the minimum of the stabilization range.

For each grade of cattle or beef a maximum and minimum price on a hoof basis is established and, varying with grades and locations, there is a spread of from $1 to $1.50 between the maximum and the minimum. In order to have figures on cattle costs the OPA analyzes each month the costs of cattle reported to the office of price fixing by a large number of slaughterers scattered throughout the country. During the past several months these figures indicate that the beef slaughtering industry has been buying cattle on an average basis 10 to 25 per cent higher than the floor stated.

Definitely, this means that the industry is obliged to buy cattle at from 85 cents to $1.15 under the minimum of the stabilization range. Slaughterers in the New York area would not have such high cattle costs of the lower quality of the stabilization range if they would buy the grades and types of cattle which are available in volume and which are being bought and slaughtered by the industry.

With these lower cattle costs the New York slaughterers would not have the excessive losses which many of them maintain they are suffering.

This is a brief statement coming from our Administrator on the problem and the purchase price and the subsidy program on the live cattle.

I want to take up the balance of my time, however, with a discussion of the enforcement measures which we have taken in order to cope with the black market in meat.

The black market in meat began in the early part of 1943 immediately following the effective date of maximum price regulation No. 169 which was issued on December 16, 1942. However, the months of January, February and March 1944 were perhaps the most difficult months in the history of meat enforcement. As was expected, a severe enforcement problem developed in these areas—these areas consisting of the northeastern portion of the United States and the West Coast, with approximately 10 per cent of the population of the country located in the New York metropolitan area. The meat enforcement problems in that area were particularly unpleasant.

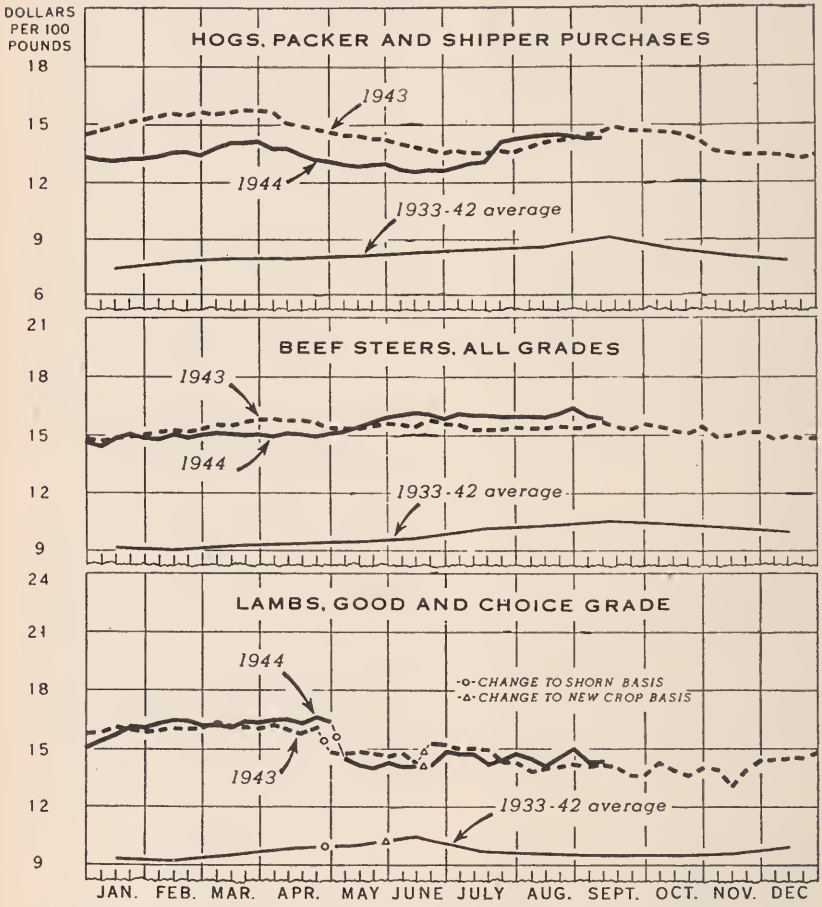
As a result, the most stringent actions available to us were employed to cope with the situation.

The first jail sentence imposed for violations of the meat price control were those of the Boston meat slaughterers and they took their cases to the Supreme Court of the United States which eventually suspended the Emergency Price Control Act and the enforcement and the regulation.

Indictments Returned

In the New York area indictments were returned not only against local slaughterers and wholesalers but also against Midwest packers. In March, 1944, a conspiracy indictment was returned in Newark, N. J., against Peter Gunthe and others. Gunthe was a large Midwestern packer and indictments were brought against him together with many slaughter-

PRICES OF SLAUGHTER LIVESTOCK AT CHICAGO
1943-44 COMPARED WITH 1933-42 AVERAGE



As in 1942 and 1943, prices of slaughter livestock in 1944 have been materially above average. Hog prices were considerably lower during the first half of 1944 than in the corresponding period of 1943, but advanced during the summer to reach 1943 levels. Prices of hogs and lambs are expected to continue high in 1945, reflecting reduced slaughter. Cattle slaughter may set a new record in 1945, but prices may average about the same as in 1944, since beef supplies probably will still be insufficient to meet demand at these prices.

ers and New York metropolitan wholesalers. It was understood throughout the country that Peter Gunthe and his group represented the largest single black market for beef. As a result of the indictments brought, all defendants pleaded guilty and Gunthe was sentenced to jail.

In order further to protect the New York market against such groups and practices, our enforcement agencies went as far west as Denver, Col., where they filed suit against one of the large packers out there, and judgment was entered against that company.

Now, soon after the inception of the meat subsidy program, arrangements were completed with the Defense Supply Corporation whereby subsidies due wilful violators were withheld. In several cases a recommendation has been forwarded by the New York Regional Office to the Defense Supply Corporation to withhold payment of subsidy on livestock. In the case of one company in Newark, N. J., the company had to pay a fine of $50,000 for violations and a subsidy of approximately $500,000 was withheld on the re-indictment of the company.

The subsidy has been extremely valuable in maintaining price sales control in the wholesale-retail area.

That is not all we have done. I should like to explain to you that we have put many black market operators out of business. Our records show that during the past year 168 wholesale meat and poultry dealers have been convicted in Federal Court and fined or put behind bars for prison terms ranging from 20 days up to one year and a day.

Fines totaling more than $750,000 were paid in court by violators.

Fifty other wholesalers are now under indictment and awaiting trial, or have pleaded guilty to the charges and are awaiting sentence. The OPA has collected about $200,000 from wholesalers in treble damages, and treble damage suits for more than $5,000,000 are pending in court against some 65 dealers.

More than 50 slaughterers and wholesale meat dealers have been suspended for various periods, ranging from two weeks up to the duration of rationing, while Federal Court injunction orders have been obtained against another 75 wholesalers.

A few days ago Mr. Bowles said in Washington that enforcement of wholesale meat regulations has been vigorous in the New York metropolitan area since the early part of 1943. Mr. Bowles and Mr. Woolley have pledged themselves to continuing the enforcement drive against the black market in meats and poultry at the present stepped-up pitch.

Today, tomorrow, or the next day we will be indicting the first people violating the poultry ceilings in the Delaware producing area. I have been told this morning that those indictments were expected to be filed in the next day or two.

Of course, we must always keep in mind that the possibilities of fat and fast profits tempt speculators and chiselers who have never been in this business before, and who believe that they can get away

with it by evasions for which some of their predecessors are now sitting in jail.

A Fight on Inflation

You can rest assured that the OPA is constantly on the lookout for these lawbreakers who are out for profits at the expense of the people's fight against inflation.

OPA's fight against violating food retailers has also been maintained at an increasing pace. The results of this vigorous policy are made known to the public almost daily, as violators by the scores are fined or jailed in magistrates' courts, in actions brought by the OPA under New York State War Council authorizations.

From this brief review of OPA enforcement activity, it is quite apparent that we are concentrating our heavy guns at violations at the wholesale levels. We intend to continue along this line.

We are always uncovering new evasions. It might interest you to know that in a few days we will go into court and put an end to a newly uncovered operation which had the effect of taking substantial amounts of meat away from retail butchers and consumers. This was contributing to the current shortage of meat in the retail stores and in homes.

In conclusion, I want to make one observation: We who are in OPA who fight this daily battle, try to do our best with the resources at our command, are fully conscious of the fact that we are part of the big army that is fighting this war on the battlefronts around the world and so long as we fight black marketeers in meat and other commodities can we hope to bring about substantial results.

". . . common sense and fair play . . . these . . . can easily stamp out the black market."

Why Black Markets in Food?

By Nathan Sweedler

Attorney, Eastern States Independent Slaughterers & Meat Packers, Inc.

I HAVE BEEN asked to discuss "Why Black Markets in Food?" To go extensively into a discussion of all the factors which contribute to price gouging and unlawful practices would take a protracted period, far too long for the time allotted me. However, there are many salient points which I shall bring out in this talk.

In the first place, I believe we are all agreed that the men in our armed services have the first call on all our supplies. Their needs must be met regardless of all else. Every American is in this war wholeheartedly and with but one thought in mind, and that is a speedy victory and a lasting peace.

All else must be subordinate to this objective. We all have loved ones on the various fighting fronts. Our hearts, our minds, and our spirits are with them. Their welfare and their comfort are our first concern. Therefore, the subject of black markets, that insidious viper which is sapping the vitality, endangering the health and upsetting our economic condition at home, is of imperative concern to each and every one of us.

We cannot afford to be indifferent to it if we are to preserve democracy at home and back up our men at the fighting front. They expect it of us and have a just right to demand that we maintain a rigid vigilance at home.

Congress has taken measures through emergency price control, rationing, allocation of materials and other enactments to prevent inflation, to give each person his proportionate share of the available food supply and to provide for the health and well-being of the people at home during the war emergency.

Some such legislation is necessary in war time and I doubt if any person has any objection to it. In fact, if these measures were put into operation as Congress intended and an effort were made to coordinate the various agencies and operate them in a common sense, fairplay method, it is possible that we would never have known black markets in this country. However, theory is one thing and practice is another.

OPA Arbitrary

In practice, OPA has been arbitrary. Prices have been fixed throughout without regard to public requirements, costs, distribution methods, etc. Although the Emergency Price Control Act clearly sets forth in Section H—Quote—"The powers in this section shall not be used or made to operate to compel changes in the business practices, cost practices or methods or means or aids to distribution in any agency," the exact opposite has occurred in most all industries, and especially the food industry in which we are vitally concerned.

Since the start of OPA, I have been intimately connected with the meat industry and can speak from firsthand knowledge of just what has happened there and the ostrich-like attitude of OPA in handling the situations as they arise.

Prices were arbitrarily set on meats, cuts and grades were changed from those generally in use to others and sometimes these were entirely new to both the industry and the public which resulted in confusion. The attempt to change the eating habits of the nation may well be illustrated by an incident in the fish market.

For generations, the public has been accustomed to purchasing its codfish with the skin off. OPA, through some master mind, decided to change this practice and ruled that henceforth codfish would be sold with the skin on.

Thus no fisherman was allowed to skin codfish. However, the public, unaccustomed to codfish with the skin on, refused to buy it in that condition and storehouses in Boston were filled with codfish while the market exhibited a shortage in fish.

Again, take the poultry industry. A farmer recently commented in the *New York Times*—"My farm is set to produce 130,000 pounds of chicken a year. Three years ago I paid $45.85 a ton for feed. This month I paid $86. Three years ago I paid $8.55 a 100 for chicks. This month I paid $13.30. These increases of 87 per cent and 55 per cent are applicable to all poultry men and are governed by ceilings. Labor has gone up so much or more, but, of course, varies with different farms. All of which totals up to an increase of 77 per cent in my cost of producing a pound of chicken. I do not sell above the ceiling price and as a result am fearing the end of my business and the loss of the savings invested in the farm."

Thus, we see that costs are continuously going up while the ceiling price remains the same.

For instance, when the housewife enters a store and requests butter, the retailer realizes that if he does not get it for her, she will go elsewhere and secure it at black market prices. So he must see to it that he has butter on hand. He just cannot say "I am going out of business because I cannot get items at ceiling prices."

It has taken years for these small business men to build up their business and many of them have now reached a period in life where it would be difficult for them to find employment in private industry or go into some other line of endeavor.

Therefore, they follow the course of least resistance and supply the

butter at cost. Again, in some instances, and in some commodities, a merchant will buy his goods at black market prices and sell them at ceiling. Thus, he absorbs a loss on one item with the hope of making good his loss on another.

He soon discovers that he is unable to do this for long even though in the past it was an established business practice. The OPA, in establishing ceiling prices, has allowed no latitude and so the individual merchant soon has to figure on making each item pay for itself if he intends to stay in business.

Many Factors Ignored

For instance, in setting the ceiling prices on meat, OPA never consulted local cattlemen, slaughterers and processors. It failed to take into consideration freight rates, refrigeration, loss of weight in slaughtering and dressing, losses due to illness, death and rejections, cost of feeding cattle in transit and in stockyards and labor costs, all of which go into the cost of production.

The price was arbitrarily set and it was discovered that slaughterers were required to sell their product at a ceiling price below the actual cost of putting it on the market. It is easy to see that this could not be done—that is easy for everybody but those who had charge of establishing ceilings.

While they admitted that something was wrong and that a hardship was being inflicted upon the small business man, there was really nothing that could be done about it.

I have spent days in New York with local and regional officials of the OPA trying to get some semblance of order out of chaos and a fair and equitable solution to the price problem, but without result. I found that local officials were merely rubber stamps for Washington and that before anything could be done about a local problem the master minds in the National Capitol must be consulted. Trip after trip was made to Washington with nothing but a gigantic run around and good natured brush-off as a result.

Hour after hour I studied the 17 odd volumes of OPA regulations —it is like going through a maze which has no entrance or exit. The layman is hopelessly lost in the confusion of rules, regulations and requirements. Even the seasoned lawyer finds himself stymied, for just as he has apparently got a solution, he discovers that a more recent ruling which has not yet been published has upset the applecart and he has to start all over again.

In fixing prices, OPA has not taken into consideration the time and money involved in filing reports, keeping additional records, and answering questionnaires. In addition, the OPA employs numerous inspectors to harass and annoy the small business man, upset his operations and generally discourage him, all of which increases the cost of production and distribution and for which the business man may not hope for compensation.

Now, it is a simple matter of mathematics that a business man cannot sell his wares for less than

it costs him to produce them and stay long in business. Any fourth grade student can figure that out.

Either the business man must get his costs back and a reasonable profit with which to live and expand his business, or he must suspend operations. His equipment is constantly depreciating, replacements must be provided and he must have the means to take care of these costs.

But Two Choices

Where is the money to come from? Obviously from the sales of his product; but when a ceiling is set below the actual cost of production and additional expenses are heaped on him by overhead in filing reports, keeping records and answering questionnaires, how can he get sufficient funds to operate his business? The answer is—he can't. Therefore, he is given but two choices—close down his business for the duration, throw thousands of workers out of employment and make them a burden on the taxpayer, or supply the funds through getting more than ceiling prices.

Some have taken the first alternative and have closed down. Others, who want to be honest, and feel that it is essential to the security of the country and to back up the boys at the fighting front have kept open and have tried to continue their established practice—a practice upon which this very country was founded—that of getting back their actual costs. This has been termed the "black market."

The customer wants food and is ready to pay a fair price for it. None of us are looking for charity. No one expects the local merchant to be a philanthropist and hand out a dole to every customer; yet with many of the current ceiling prices that is just what the OPA is requiring the manufacturer, the wholesaler, the distributor and even the small neighborhood store to do.

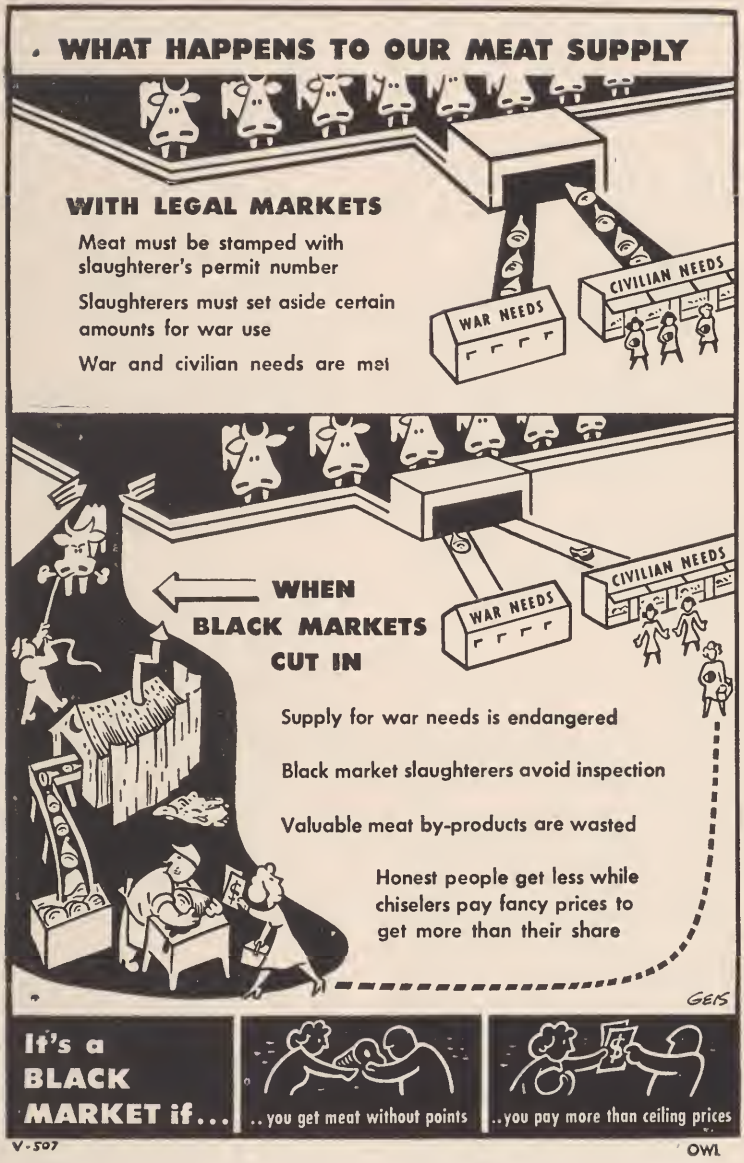
For a time, he tries to do it. Then he is faced with the problem of closing up his shop or getting back his costs. He has always got his costs out of his sales and he sees no wrong in continuing. He feels that it is his God-given right. Therefore, through one means or another he reimburses himself for his losses and finds that he is in the black market.

After a study of the situation, I offered a number of solutions in the meat industry, each of which would have established prices, held the line and would have curtailed if not entirely eliminated the black market. First I offered to purchase a carload of cattle, turn it over to OPA to check the costs of freight, feeding, refrigeration, loss slaughtering, etc. under the most ideal conditions and then establish an equitable ceiling price which would be honest.

In this I had the cooperation of the Mayor. What was the result? OPA rejected the proposition. However, it still holds good and I am willing to do the same thing today, turning the cattle over to this committee and let it determine the cost of production and distribution, and the actual ceiling price which should be established.

Pooling Proposed

The second proposal was to pool interests of cattlemen, slaughterer,


WHAT HAPPENS TO OUR MEAT SUPPLY
WITH LEGAL MARKETS
Meat must be stamped with slaughterer's permit number
Slaughterers must set aside certain amounts for war use
War and civilian needs are met
WAR NEEDS
CIVILIAN NEEDS
WHEN BLACK MARKETS CUT IN
Supply for war needs is endangered
Black market slaughterers avoid inspection
Valuable meat by-products are wasted
Honest people get less while chiselers pay fancy prices to get more than their share
GEIS
It's a BLACK MARKET if...
..you get meat without points
..you pay more than ceiling prices
V-507
OWI

wholesaler and retailer for the duration by the consignment method. This might have enabled the present ceiling to be maintained and would have covered costs. It received much support and was legal. However, as soon as it was proposed, OPA instituted a ruling forbidding such practices.

The third plan was direct sales from producer to consumer. This was tried out in Washington Market with considerable success.

Let us take another method of OPA which is creating the black market. No attempt is being made to ascertain the cause of the black market, and thus eliminating it. Instead, offenders are being hailed into court in wholesale lots and thousands of dollars are extracted in fines. These fines are added to the cost of operation and are recouped through further black market operations.

In the *Produce News* of October 14, 1944, headed "OPA Enforcing Compliance by Tricking Trade," many of the current practices are illustrated. These usually accomplish the aim of price control by making a victim of an innocent merchant. "The procedure is simple," the article states. Once its casual appearance has disarmed the victim, merchants are approached in their places of business by OPA enforcement officers who ask them a few simple questions in a good-natured and friendly manner about the conduct of their business. He asks questions such as "Do you sell cabbages?" "Yes." "You obey the OPA rules, don't you?" "Yes." "You wouldn't mind signing a paper stating these facts to help me with a little survey that I am making in the trade?" "No, of course not." Whereupon, the merchant signs his name to a mimeographed questionnaire that has all the earmarks of a harmless canvass.

The OPA man thereupon witnesses the signature and signs his own name in the lower left hand corner where the questionnaire reads "Sworn to and signed by me this ——— day of ——— 1944."

Unknowingly, and without raising his right hand the merchant has sworn to a legal document that can be used as the basis of a charge against him. In a week or so he may be notified to appear before the enforcement attorney of the OPA where he finds that he has in his affidavit admitted violation of the letter on the law in regard to selling under OPA price control regulations.

"You do not want to violate these regulations," he is asked, and naturally says "No." "Well, then," says the OPA man, "I want you to sign this other paper which says that you agree to abide by these regulations." He signs it. The records show that a great number of firms in the Greater New York area have signed these documents.

Incidentally or rather actually, they are consent decrees, legal and binding in every respect. Actually, too, they contain an admission of previous violation by the merchant and a promise to the Court not to repeat the offense. The fact is that any subsequent violation, intentional or not, becomes a second offense and the violator is immediately liable for contempt of

Court. As such he has little opportunity for defense. The judge may fine or imprison him without a trial.

Shop Closing Suggested

Recently OPA has suggested that the shops of price gougers be closed in a manner similar to the way in which the enforcement officers during the days of prohibition closed speakeasies. What was applicable to the speakeasy, which in itself was illegal and an outlaw institution, is not applicable to legitimate business. In the first instance, the operator of the speakeasy was willingly violating the law and knew his operations were illegal. In the case of the present alleged black market, the merchant is dealing in legitimate commodities, trying to do an honest business and carry on a practice which has been in vogue ever since this country has been established—that of getting back his legitimate cost of operation plus a reasonable living expense.

To close these stores would greatly decrease the number of retail and wholesale outlets, increase the demand on stores which continue to operate, thus enlarging black market operations, for fewer outlets mean less food supply for a greater number and the favored ones would be required to pay much above ceiling in order to get their required rations.

The Mayor[1] has suggested putting officers into so-called. chiseling stores. This, in itself, would be an indirect black market operation, in that the officers would have to be paid and those salaries would come out of the taxpayer, thus increasing taxation which would amount to adding a few pennies more to the ceiling price of each article bought, while it would not be visible and would not violate ceiling prices, it would through an indirect means bring about inflation through a heavy tax burden on a long suffering public whose back is now bent double with heavy taxes.

It is surprising that the Mayor would make this suggestion in view of the facts brought out by a vice-president of the International Amalgamated Meat Cutters & Butcher Workmen of the A. F. of L., at a meeting of Local 5 Packing House Workers Union, on November 25, 1944—"I know the City is in the black market," said the vice-president, "the Mayor has a hand in it, I have gone over the situation twice with him on a Committee."

As a result of this and many similar meetings, a wholesale closing of the slaughtering industry in New York City and other parts of the country, is threatened because slaughterers want to remain in business and be honest in their dealings, but cannot do so under OPA ceilings. Thus it becomes a vicious circle and nobody benefits.

Inflation comes upon us and everything gets out of hand.

Wages Also a Factor

Another contributing factor to black markets in foods is the impractical manner in which wage stabilization is handled. An existing slaughterer finds the wages of his employees frozen; but a new

[1] Mayor F. H. LaGuardia, of New York, at the 1944 hearing in New York City.

company coming into the field has no such established ceilings and can make his own wage scale. Thus he may pay higher wages than his competitor and create a dissatisfaction in labor circles. Of course, in order to make a change of employment an employee must get a release. If the employer refuses, the employee finds ways through absenteeism, illness or other devices to secure his release and get employment at higher wages. No one can blame him for this. In fact, a worker deserves to get all he can legally.

Now, in most cases the dealer in the black market does not want to participate in these operations. In fact he loathes them; but in the majority of cases they are forced upon him in order that he exist. Thus he cannot sell for ceiling prices. He has to be secretive in his operations and artificial shortages are created. Today, for example, there is a sugar shortage in stores, yet I am reliably informed that all the sugar one wants can be obtained at 20 cents a pound. Secret operations in food commodities endanger the health and well-being of the citizenry.

They are stored in improper places, exposed to dust, dirt and impurities which may taint or spoil the food. They are often produced under insanitary conditions and without proper inspection. All of which could be eliminated under a common sense, practical operation of the Emergency Price Control and Wage Stabilization.

It is not the fault of the various wartime acts as they are written and passed. They specifically provide against such operations. The trouble rests with the operation and enforcement, the lack of consideration and fair play, the using of the war emergency to demand the impossible and the making of law breakers out of honest men who want to do the right thing by everybody, but who must live and in order to live must not only get back costs, but in addition have enough left to buy three square meals a day and have a place in which to sleep.

What is needed is common sense and fair play. Put these into operation and we can easily stamp out the black markets.

". . . much of the meat available for civilian supply now finds its way into black market outlets."

Meat Shortages—and Relief

By Joseph Cohn

Counsel, Meat Trade Institute, Inc. and
New York Council of Wholesale Meat Dealers, Inc.

THE MEAT situation in New York City has been gradually assuming the proportions of a meat famine of an even more serious nature than prevailed during most of 1943. The recent restoration of most meats to rationing, making 85 per cent of all meat subject to rationing, and the issuance of the Office of Economic Stabilization Directive relating to prices of live cattle, though unquestionably a step in the right direction, have not improved and will not sufficiently improve the situation here, and home consumers in New York are now again faced with a situation which will make it impossible for them to obtain meat for their ration points.

Reports, attributing the current meat shortage to delay of certain meat shipments in transit owing to bad weather and making much ado about millions of pounds of meat received in or on the way to this city, are misleading, in that any gap in supply due to such temporary cause as delay in transit would under normal circumstances be adequately filled by regular inventories generally available in local wholesale meat coolers, and in that meat receipts in this city or area bear no relationship whatsoever to the local supply of meat available for home consumption and a decline or increase in such meat receipts is no indication whatsoever as to how much of the meat so received will be available for purchase by home consumers.

The reason for this lack of relationship is the fact that a large part of even such meat shipments as are received here by civilian consignees now generally consists of meat shipped here by Western slaughterers for preparation for sale to the armed forces and war procurement agencies, and that a substantial part of the remainder is intended for or is eventually absorbed by the hotel and restaurant trade and never reaches wholesale establishments selling to retail butchers or retail butcher shops.

Nor is the new meat famine here due to a shortage of livestock or expected curtailment of livestock production, or increased meat purchases by the armed forces and war procurement agencies, or increased consumer demand for meat in high wage war industry areas, as the Office of Price Administration and the War Food Administration will undoubtedly again try to explain, for the facts are:

1. That the total meat required by existing war food orders to be set aside for war needs does not exceed 40 per cent of the total volume of meat of all kinds produced under Federal inspection;

2. That all types and cuts of meat, for which there may have

otherwise been an increased consumer demand in high wage war industry areas, have now been restored to rationing and should henceforth be available to any group of consumers only to the extent of ration points in their hands; and

3. That, according to the War Food Administration's own estimates, present herds and expected 1945 production of livestock will be sufficient to fill all war meat requirements and all civilian meat requirements under rationing.

The fact also is that the new local meat famine, as well as the meat famines which prevailed here in 1942 and 1943, is not and has not been due solely to lack of ceiling prices on livestock, as the price difficulties resulting therefrom are not peculiar to this area and have prevailed in the same measure in other areas where meat has been much more plentiful, but is and has been due primarily to Office of Price Administration and War Food Administration policy and provisions which have regularly and consistently operated to completely destroy this city's sources of supply and channels of wholesale distribution of meat and has made impossible the continued flow of meat through normal and established channels of wholesale meat distribution here.

That said policy and provisions will bring about a further meat famine here, was predicted by the wholesale meat trade here, as early as February, 1944, in a report on "The Meat Situation in the City of New York" submitted by the undersigned Institute and Council to the New York State Joint Legislative Committee on Nutrition and published in the Consolidated Report of said Commission for the year 1944 (Legislative Document, 1944, No. 73, pages 124 to 128), wherein it was stated:

"All indications are to the effect that, unless Office of Price Administration and War Food Administration price and rationing policies be radically changed to take into full account the complex meat supply and distribution systems peculiar to the New York City metropolitan area, which has a population of 12,000,000 but no nearby livestock producing centers or adequate slaughtering facilities of its own, New York City will, in the not very distant future, again face a meat famine of even more serious proportions than prevailed there during most of the year 1943. Moreover, the expected meat shortage will recur in New York City, notwithstanding the fact that meat may continue to be plentiful elsewhere."

Having, since the early days of meat price control, repeatedly warned the Office of Price Administration and the War Food Administration about the dislocating effect of the existing meat price policy and provisions, and believing that it is in the public interest and in the interest of the war effort that the people and the meat industry of the city of New York should know the true causes of the recurrent meat famines here and the measures necessary to relieve same, it is respectfully submitted

by the undersigned Institute and Council:

Causes of Famine

That the true causes of the recurrent meat famines here are as follows:

1. That the slaughterhouses and slaughterers' branchhouses here normally supplied only a part of the meat required by the people of this city, and that most retail butchers here normally depended for all or a major part of their meat requirements upon non-slaughtering wholesalers (including non-slaughtering processors), who brought here weekly hundreds of carloads of dressed meat from Western slaughterhouses of the major packers and of independent slaughterers, and, in addition thereto, distributed much of the meat produced in the local slaughterhouses of the major packers and in the local independent slaughterhouses;

2. That section 172 of the Sanitary Code of the city of New York, which has been in effect since 1917, prohibits the sale or possession of any meat not Federally inspected and passed (unless inspected and passed by the city, which inspects only a fraction of 1 per cent of the incoming meat), and that by reason thereof the people of this city normally were and still are dependent upon Federally inspected meat for virtually their entire meat supply;

3. That, in the absence of new sources of civilian supply of Federally inspected meat due to existing provisions requiring a large part of the production of such meat to be set aside for war needs, this area, which normally drew its meat supply from virtually every part of the Nation, cannot be expected to and will not have an adequate supply of meat, especially at ceiling prices, *unless*

a. Every slaughterer who normally, directly or indirectly, supplied this area will continue to do so during the remainder of this war emergency period, and *unless*

b. The deliveries of each such slaughterer to every wholesaler here, whom he normally supplied, be in substantially the same proportion to his current total civilian supply of meat, as were his deliveries to such wholesaler prior to said period;

4. That, owing to the above-mentioned Sanitary Code provisions, any deficiency in the meat supply of this city, resulting from the discontinuance or curtailment of shipment by any slaughterer who normally supplied this city, cannot be filled or relieved by additional non-Federally inspected slaughter, as is the case with other areas having no such local laws;

5. That, notwithstanding the obvious necessity of their continuing to supply their estwhile wholesaler customers, the major packers have, since the beginning of meat price control, regularly and consistently refused to sell any meat to wholesalers, whom they normally supplied and upon whom the civilian population here normally depended for a major part of its supply of meat, or to sell any meat to retail butchers who normally purchased from wholesalers, and have made available to the consuming public here only such quantities of meat

as they have been able to sell directly through their own outlets to hotels and restaurants and a select retail and other trade of their own choosing;

6. That, owing to mandatory carload discounts and other price provisions affecting wholesalers, many Western and local independent slaughterers, who have no branch-houses here and who normally served this area by shipping a large part of their meat supply to wholesalers in this city, have likewise found it more advantageous to sell their meat elsewhere and to completely discontinue or reduce their shipments to wholesalers here;

7. That much of the meat available for civilian supply, which would ordinarily be sold to and distributed by established wholesalers here, now finds its way into black market distributive outlets and never reaches legitimate channels of trade;

8. That wholesalers here have found it increasingly difficult to obtain meat at ceiling prices or to maintain their establishments with a volume insufficient to cover operating costs; that most of the local firms which were engaged in the wholesale meat business at the beginning of meat price control and had been engaged in said business for generations have since then been forced out of business, and that the remaining established wholesaler firms, which still struggle along with little or no meat, will be unable to continue in business much longer and will soon likewise be compelled to discontinue operations;

9. That the sources of supply and the trade, which wholesalers already ousted or about to be ousted from business have been compelled to relinquish, have not been taken over by other legitimate channels of trade, but by racketeers of every kind and description, who did not normally engage in the wholesale meat business and who entered said business during the past two years, when same could not be lawfully operated without substantial loss, with the obvious purpose of capitalizing on the opportunity of engaging in profitable black market operations; and

10. That the gradual elimination of established wholesalers from the meat industry here has left most retail butchers here without any legitimate source of supply, and that the inability of said butchers to obtain meat at ceiling prices will continue, regardless of the establishment of ceiling prices on livestock and the restoration of most meat to rationing, until regular wholesalers be enabled to resume their rightful position in the meat industry here and to continue to supply the many thousands of retail butchers, who normally depended on them for their supply of meat.

Recommendations

That, in order to enable regular wholesalers here to continue or resume operations, and retail butchers here to secure needed supplies of meat at ceiling prices, it is necessary:

1. That every slaughterer be required to sell monthly to every non-slaughtering wholesaler, who purchased meat from him during

the year 1941, the same percentage of his current total monthly civilian supply of each kind of meat as the percentage of his total supply of such meat which he sold to such wholesaler during the corresponding month of 1941;

2. That equitable distribution of available civilian meat among regular wholesalers be further assured, by provisions limiting the volume of all meats (other than sausage), which may be sold by any wholesaler or other intermediate distributor to purchasers other than War Procurement Agencies, to the volume of such meat sold by him to such purchasers during the corresponding period of 1941;

3. That all mandatory carload and other quantity discounts be eliminated and that wholesalers be again enabled to buy meat in carload quantities, as was their normal practice; and

4. That the wholesalers' operating margin be increased to 2¢ per lb., which is the minimum necessary to cover operations under present conditions.

That the slight increase in the wholesalers' operating margin will not necessitate an upward revision of present retail ceiling prices of meat, for the reason that retailers, who are now able to purchase meat from packers at the latter's ceiling prices, will be able to continue to buy from said sources, without being affected by the increase in the wholesalers' operating margin, and that the rest of the retail butchers, who are now compelled to purchase meat from black market sources or to buy from packers meat tied in with other products which they cannot sell, will gladly absorb the slight increase in cost resulting from the increase in the wholesalers' operating margin, without seeking a corresponding increase in retail ceiling prices.

That requests for relief to the foregoing effect have been repeatedly submitted to the Office of Price Administration and the War Food Administration by the undersigned Institute and Council, ever since the beginning of meat price control, but have been to no avail.

That formal and documented protests against existing price provisions affecting wholesalers here and the lack of implementation of said provisions, reiterating said requests for relief, will be filed with the Office of Price Administration in Washington, D. C., and it is the earnest hope of the undersigned Institute and Council that the Office of Price Administration, and all other Governmental agencies having any jurisdiction in the matter, will at last recognize that this city and area cannot be supplied without wholesalers; that a breakdown of meat price control and rationing here due to lack of provision for local wholesalers is not purely a local problem, but has seriously impaired and will continue to seriously impair the effectiveness of the meat price control and rationing programs throughout the nation as well as the program of reserving adequate meat supplies for war needs, and that no measure short of restoring the normal and regular channels of wholesale distribution of meat in this area will make meat price control and rationing truly effective.

". . . primarily a price problem which has also brought about a mal-distribution of meats."

Why the Meat Shortage?

By W. M. Curtiss

Associate Professor of Marketing, Department of Agricultural Economics and Farm Management, New York State College of Agriculture, Cornell University

—U. S. Army (Signal Corps) Photo

Our fighting men eat twice as much as they would have eaten as civilians. These men have lined up for hot "chow" in a German forest.

A VARIETY of explanations are given for the winter of 1944–45 meat "shortage." One is that production is down; another is that we are shipping so much meat abroad. Still another explanation is that our fighting men eat twice as much as they would as civilians. Some say black markets cause the shortage.

In 1944, in the United States, we produced nearly 25 billion pounds of meat compared with an annual average of 16 billion pounds in the five pre-war years 1935–39. With an increase of more than 50 per cent in production, one must look further than production for an explanation of the "shortage."

Civilians are taking what meat is left after deductions for lend-

lease shipments and consumption by the armed forces. In 1944, the year of great "meat shortages," civilians had 143 pounds of meat compared with 126 pounds in the 1935–39 period. No one was greatly concerned about meat shortages in 1935–39. How can it be, then, that in 1944, with civilian meat supplies nearly 14 per cent greater than the pre-war years, people talked about the meat shortage, New York City and other areas had trouble getting meat, and there was general confusion throughout the trade? Can it be that what we call a "shortage" really has little relation to the actual number of pounds of meat that people can buy?

If the "meat shortage" is not due to decreased supplies, what then is the cause of it?

What appears to the consumer as a meat shortage results from at least three conditions which should be considered separately. (1) The mal-distribution of the available meat supplies which has resulted in chaos in some areas like New York City and Boston; (2) That even with "normal" distribution, there would appear to be a shortage of meat; (3) That because meat is rationed by tickets, the same amount to each individual, some people actually have less meat than formerly although the entire population has more.

The mal-distribution of meat between some of the Eastern cities and other areas is the result of trying to do a job by regulation that is just too big. When ceiling prices are set on meat, allowances must be made for the various services rendered in the channels of distribution and for different areas and for all the different cuts and grades of meats. This is a tremendously complicated job which the delicate price mechanism normally handles automatically, cheaply, and efficiently.

Even if we had a normal distribution of the available meat supplies, consumers would feel that there is a meat shortage because meat is too cheap. In normal times the price mechanism is so delicately balanced that the available supplies of a commodity are offset by the amount of money people are willing to spend on that product at the going price. Take automobiles for example. If the price of cars is $800 and this price just moves the cars that are manufactured so that anyone who has $800 to spend for a car can get one, then there would be no shortage. Now, if peoples' incomes suddenly double but car prices remain the same and the number produced remains the same, then, of course, a lot more people will want new cars. When people find that no more cars can be had, even though they have the money, then they think there is a shortage of cars even though there are just as many as before.

A similar situation has arisen with meat. Peoples' incomes, after taxes, have doubled since the pre-war years and a lot more money is available to spend for meat. If the price of meat is not allowed to rise along with increased incomes or if available supplies do not expand along with incomes, then people feel that there is a meat shortage because they cannot use

all their "meat" money at prevailing prices.

Why not let the price of meat rise to a point where some of the unusual demand, resulting from high incomes, would be discouraged and the money people want to spend for meat would balance the available supplies so that no one would have reason to say there is a shortage? "Oh, my no!" someone says, "the price would go out of sight," or "that would cause inflation," or "the farmers would get too much money and that would cause inflation of land values," or "the poor man wouldn't get his fair share of meat." Those are only a few of the goblins that are brought out when this question is raised.

Without Controls, What?

How much would the price of meat rise if ceilings were removed? Or, what would be the price of meat today if there had been no ceilings and rationing? One prominent official said meat prices would rise to "unbelievable heights" if ceilings were removed.

One branch of our Government which specializes in facts, has some information which indicates what happens to meat expenditures with increasing incomes of people. It seems that when incomes double, expenditures for meat increase about 50 per cent. Incomes have about doubled since the pre-war years and as a result, you might expect that people would be willing to spend about 50 per cent more money for meat.

Now there are at least two ways in which people may increase their expenditures for meat. One is for them to buy 50 per cent more meat at the same price; the other is to buy the same amount of meat at a 50 per cent higher price. Actually we have had a little of both. The amount of meat has increased 14 per cent and the price has increased 30 per cent since pre-war. Still, people seem to have some "meat money" left over and we say, "you can't spend it on meat," and the result is the so-called meat shortage.

From all appearances, it would seem that the price of meat would have to rise only slightly from its present level to balance expanded incomes with available meat supplies. In normal times, we would expect that a 14 per cent increase in supplies and a 30 per cent increase in price, such as we have experienced, would offset a 95 per cent rise in income. On this basis, only a small further rise in meat prices would be needed to absorb all of the extra "meat" money that people have.

Normal relationships of income to meat expenditures may not be entirely applicable to present conditions. Because of the limited supply of durable consumer goods such as automobiles, refrigerators, stoves, etc., the money which people would normally spend for these probably increases the amount available for foods and other goods and services which are available. Offsetting this influence, to an unknown degree, is the pressure on peoples' incomes to buy war bonds or to save money in other ways to buy things in the post-war period as they become available.

The assumption that the price would rise only slightly, if at all, if ceilings were removed, is supported by the recently reported statements of some people in high places that meats could be placed entirely on the point-free list of rationed items. The fact that practically all meats were placed on the point list does not mean that rationing was necessary. It may be, as reported, that some officials felt that people needed something to make them more war-conscious. If a price-controlled product no longer needs rationing, as may have been true with meats, that is an indication that the controlled price is no lower than the free market price would be.

If the price mechanism were again allowed to operate, the problem of mal-distribution of meats would be solved as well as the so-called shortages of meat. The efforts of thousands of individuals would be released for the important job of winning the war quickly. If, as seems likely, the price of meat would rise only slightly, the other arguments against such action would be relatively unimportant.

What About Inflation?

"Still," you hear, "we must hold prices down to prevent inflation." That's much like saying we must cut off all thermometers at 80° to keep our Summers from getting so hot. We could do that, and our "official" temperature would never go above 80°. But in reality inflation isn't prevented by holding prices down any more than a hot day is prevented by controlling thermometers. Inflation can only be prevented by keeping peoples' incomes, after taxes, in line with the quantity of goods and services offered for sale. We have failed so badly in doing this that it is absurd to talk about "holding the line."

Some argue that if we can just hold prices down until after the war when industry can get back to the production of civilian goods, we can avoid inflation. The wages paid labor in the post-war period will create purchase orders for whatever goods are then produced. As a matter of fact, the continuation of price controls in the post-war period under the guise of inflation control may be one of the most important stumbling-blocks to a speedy and successful reconversion.

Price Control Arguments

One of the arguments for price control which has been frequently put forth is that it makes it possible for the poor man to get his fair share of meat instead of letting the rich man bid it away from him. Therefore, we give each person, regardless of age, sex, activity, or income, tickets entitling each to the same amount of meat. If it is desirable that everyone have the same amount of meat in wartime, why isn't it equally desirable in peacetime? Actually there is probably less reason to attempt an equal distribution in wartime because the income group which we sometimes refer to as the lower-third has a higher proportionate rise in incomes during inflation and high employment than other income

groups. They are able to buy a higher proportion of the meat supply than formerly.

If it is wise to divide the meat equally, why not also divide the automobiles and the washing machines, and the homes, and the jewelry, and the mink coats equally? Those who accept the division of wealth as a war necessity should realize what it may lead to. It is no accident that the United States has developed the highest standard of living of any great nation. It was not done by dividing the wealth but rather by permitting a man to receive according to his contribution. This profit motive has stimulated high production which, after all, is what makes for a high level of living. True, there are some imperfections in this system but that is no reason to discard it entirely.

Price Control Dangers

There are two dangers of price control and other forms of bureaucracy which are extremely difficult to measure in any precise manner but which are no less real. One is the various forms of dishonesty both in high places and in low, which are apparent to all. Every new regulation stimulates someone to try to find a way around it. A commonly heard statement is that one can't be honest and stay in business. Black markets are one expression of this dishonesty. Lawyers are hired to find "legal" ways of getting around the intent of regulations. The ultimate affect on society of this continual weakening of the moral fiber is a sobering thought.

Perhaps a more serious condition brought about by more and more bureaucratic controls, first under the guise of curing a depression and now of winning a war, is our gradual giving up of our economic and other freedoms. There are those who think we can go part way in that direction and stop. There is little to indicate that those who are trying to "plan" our destiny as a nation have any intention of stopping. It may still not be too late to consider whether we want the increasing levels of production under a system, even though not perfect, where man has the privilege of taking a chance, of making a mistake and of going broke but if he succeeds is rewarded accordingly, or a system where waste, inefficiency, and dishonesty are prevalent and individuals gain advantages through pressure groups. Under the latter system it is conceivable that the production of a nation might be more evenly divided but much less would be available to divide.

The present meat "shortage" is neither a production problem nor a shortage of supplies for civilians in terms of what they have been accustomed to. It is primarily a price problem which has also brought about a mal-distribution of meats. These problems are not peculiar to meat. Many of our "shortages" of such things as cigarettes and many fruits and vegetables are similar. The remedies are simple and the advantages to the war effort would be great.

"Food consumption on no continent differs more than a few per cent one way or the other from the world average. . . ."

Food Differences Around the World

By F. A. Harper

Professor of Marketing, Cornell University

If you were to sit down to dinner with every family in the world aside from the United States, you would probably find that only about one person out of every 100 is eating as well[1] as the average person in this country. With our present war-mindedness, we are likely to think of war as the principal cause of this situation because of its effects on the production and distribution of foodstuffs. We think of instances like the beseiged island of Malta and of Greece, which are exceptions rather than the rule and affect only a small part of the world. The meagerness of diets around the world, in comparison with ours, is to only a minor extent to be explained by the war. The fact is that most of the world's two billion people are now eating about the same foods and in about the same quantities as they did before the war. The present "world food problem" is, in the main, a chronic one; it existed prior to the war, and even as far back as the earliest days of recorded history. We should not expect the problem to disappear automatically, as fog before the sun, when the world returns to its peacetime pursuits.

What are the food differences that have existed around the world, from the standpoints of both quanity and quality? Accurate knowledge of these differences, and the reasons for them, is a necessary prerequisite of any solution of the world's food problems—so much so as was knowledge of the lay of the land in the building of the Grand Coulee Dam.

Quantities of Food Eaten

The belief prevails that wide differences exist, even in normal times, in the *quantity* of food eaten per person in different parts of the world. We visualize the Chinese, Japanese, and Indians as existing on only a fraction of the food we eat. But this is not true.[2] Food consumption on no continent differs more than a few per cent one way or the other from the world average of about 560 pounds, dry weight, per person.

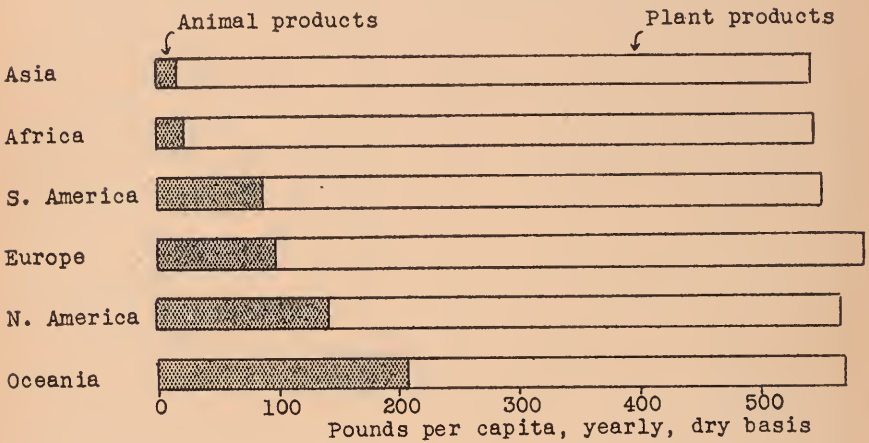
Why do our ideas on this question differ so much from the facts?

[1] "Eating well" is used here in an economic rather than in a nutritional sense. The same is true throughout this paper where "quality" and other similar words are used to describe food or diet. They are measurements of those features for which consumers are willing to spend their money, irrespective of how a nutrition laboratory worker might appraise them. Along with some nutritive features, they include others such as palatability.

[2] "Quantity," as used here, refers to the amount of food on a dry *basis*. To include the full weight of foods with their varying water contents, from cereals with a low water content to lettuce having 95 per cent water, is to use a basis for comparison that is meaningless for this purpose. Perhaps equally satisfactory, and giving essentially the same conclusions as these based on dry weights, would have been comparisons in terms of calories or total digestible nutrients.

FIGURE 1. FOOD CONSUMPTION BY CONTINENTS

On a quantity basis, consumption of people on the different continents differs by only small amounts. (The figures are preliminary)



It is partly because famines in areas like China and India have been over-emphasized. The periodic famines which occur in these areas are local and temporary. Some people die, but following the famine, when good crops return, the survivors—who are *most* of the people, on a proportionate basis—eat enough extra to rebuild their bodies to about their former weights. The *life-time* consumption of the survivors is affected little by the famine.

The difference between overeating and starvation is an amazingly small amount of food. To illustrate, if an ordinary adult were to reduce the amount of his food intake by only about three per cent, he would lose about 10 pounds of weight in a year's time; if he were to increase it by three per cent, he would gain about 10 pounds in a year. This change in weight would, of course, be so small as to be unnoticeable day by day, and hardly noticeable week by week. But in 10 years' time it would amount to a loss or gain of 100 pounds. This amount of change is conceivable only for a person either seriously overweight or underweight, as the case may be, before this loss or gain occurred; it is unthinkable on a continuing basis, on a national scale. And remember, also, that this is a change resulting from a variation of only three per cent in consumption, which is so small as to be hardly noticeable; it corresponds, in proportion, to a change in the contents of a glass of milk by only a little over a teaspoonful.

The human body is in some ways like a passenger bus. Most of the gas consumption by the bus is required to keep the motor running and the various parts operating, to move the empty weight of the bus along the road, and to keep the interior heated for the comfort of the passengers in wintertime. A nation's food requirement (per capita) is of the same nature; most of it is required to grow the chil-

dren to their adult size, to keep the bodies functioning, to maintain the "body temperature," to repair wornout muscles and tissues, and as fuel for work and play—some to pull the rickshaws and others to move their overweight bodies around the golf courses. It is for these reasons that we find only slight differences between nations or continents, in terms of the quantity of food consumed, between rich and poor, between black and white, between warm and cool climates, or between "hard-working" and "leisurely" nations.

Qualities[3] *of Food Eaten*

A common mistake is to confuse differences in *how much* people eat with differences either in *what types of food* they eat or in how much they pay for it. Wide differences exist between nations in what they eat, but not in how much. Among the cheaper foods, the Orientals eat their rice, some tropical peoples their cassava, the eastern Europeans their rye bread, the Germans their potatoes, the Italians their spaghetti, and we eat our white wheat-flour bread. Among more expensive foods, the Argentineans eat their roast beef, the Australians their mutton, the central Europeans their pork, and we eat our beef, pork, chicken and ice cream. These differences, though interesting, are not the important ones for purposes of this discussion.

One way to judge differences in quality is in terms of what is spent for food. The average person in the United States, for instance, probably spends four times as much on food as does the average Asiatic. It is for about the same quantity, and so he spends about four times as much per pound (dry). This is not too good a way to compare nations, however, because differences in what we spend for food includes both the quality of the diet and also differences in marketing services, such as raw milk vs. milk that has been pasteurized, bottled, double-capped, and delivered to your doorstep.

A simple way to test differences in quality of diets is in terms of the amount coming from animal sources, in the forms of meats, dairy products, and eggs. These foods are well liked by people. If people were offered a free and unlimited supply of all types of food, so that they could eat whatever they liked, they apparently would choose a diet having about half the foods from these animal sources, or nearly 300 pounds per capita yearly; the other half would be composed of the edible parts of plants, such as fruits, vegetables, sugar and cereals. In other words, the world's people would *like* to increase by more than five times their present consumption of foods from animal sources, and they would presumably do so, if these foods were freely available in sufficient amounts. The trouble is that they are neither available in ample supply, nor are they free. They are, in fact, extremely expensive. They are so expensive that over half the world's two billion people can afford only an occasional whif of meat, or a little now and then to

[3] See footnote "1," page 1.

be used with care as flavoring for their rice or cereal diet.

The expensiveness of foods from animal sources can be illustrated by a comparison of prices in the United States just prior to World War II. Cereals, in the forms in which we buy them, cost eight cents a pound (dry weight) as compared with 24 cents for dairy products, 78 cents for meats, and 94 cents for eggs.[4] These products from animal sources are delectable and good for us, and I am not saying that they are not worth the price. But the fact remains that they are expensive as compared with foods like grains, potatoes, and cassava, which make up four-fifths of the world's food consumption.

Food from animal sources varies from a very small amount for Asia and Africa to 150 to 200 pounds per capita yearly for Oceania and North America (see figure 1).

Reasons for Differences

The reasons for uniformity between nations or continents in the *quantity* of food consumed per person has already been discussed. The reason is that if a person is to live and work, he will require about so much food—no more and no less. Starvation and the "third chin" are surprisingly close relatives, so far as quantity is concerned.

Enough food to keep alive has priority over delectability, to the extent that this choice must be made. A person or a nation with only about enough grain to keep it alive will not feed it to animals and have, as a result, only about one-tenth enough meat, milk and eggs to keep them alive, even though they like these products better, pound for pound. A father will not let his family starve to death in order that he may live in the luxury of foods like ham and eggs.

Production Limits Eating

The reason why the world's people do not eat more of the better foods, like meats, is that no more is produced. And, of course, we cannot eat more than is produced. On every continent the people eat mainly what is produced on that continent; the principal exception to this is Europe, where about one-fourth of its food is normally imported from countries like Australia, New Zealand, Canada, and Argentine. But on a world basis, the equivalent of only a little over one meal a week is made up of food that has been moved from one continent to another. The cost of moving food great distances is so expensive that most of the world cannot afford it.

If the limiting factor is the quantity of food produced in the world, what are the prospects for expansion of production sufficient to give the world a diet even approaching what we are accustomed to in the United States? A full answer is too involved to include here, but, briefly, the prospects do not appear very promising; there is not much unused land with the necessary combination of soil, climate, and topography required for crop

[4] See "A Quarter Century of Change in Income and Food Consumption, United States," *Farm Economics* No. 129, February 1942, pages 3262–3, Cornell University.

production. To bring the entire world up to the level of the average diet in North America, we would need to increase by nearly three times our production of foods from animal sources. This would require a tremendous increased production of animal feeds. The *additional* production needed, for instance, to supply everyone in the world with a quart of milk daily would require the equivalent of enough grain to feed the entire world on a grain diet. This illustrates the stupendous production problem confronting anyone who would raise the world's diet to our consumption level.

Expressed another way, if we were to take present world production and distribute it equally, the most poverty-stricken in the United States—the lowest six per cent—would have to give up, by sharing, nearly half of their consumption of these favored foods. Half the world lives on an income[5] only one-seventh, or less, that of workers in the United States. And their plight cannot be solved simply by passing out money, because we do not eat or wear money. It is a production problem.

If the world is to be well fed, in terms of well-liked foods, we have a long way to go by any standard we in the United States are familiar with. It is a problem that cannot be solved simply by wishing and by promises. Good intentions may be a good starting point and a strong incentive, but it is no substitute for the necessary increases in *world production per person*. It is, then, a problem which can be solved only by (1) the agricultural and other scientists, through long, hard, slow progress, and the (2) "population experts," to keep the number of mouths to be fed within the limits of production possibilities. This is not a soft or easy solution, but there is no short-cut.

This sounds like a gloomy picture, but I do not wish to leave it with that tone. It is gloomy only if we set our hearts too strongly on the impossible. We should be realistic about what can be done toward improvement year by year, and about the means by which this can be accomplished. Then the outlook is promising, in terms of our expectations. Let us work toward something reasonable, rather than toward what is both economically impossible and nutritionally unnecessary. After all, the nutritionists tell us that the world can be well-fed, by their standards, without anything like the expensive and luxurious diet to which we have become accustomed in a few of the wealthier spots on earth. But that too is another story, for a nutritionist to tell.

[5] In terms of what it will buy at prices prevailing in each country. These differences represent also the approximate differences in production per person.

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The Wide Significance of Nutritional Deficiency

An Editorial in the American Journal of Public Health
March, 1945

PUBLIC health workers are watching with keen interest the new evidence which is presented, year by year, and month by month, in regard to the influence of diet upon health. Not all this evidence points in one direction. In studies with human beings on the effect of supplementing ordinary diets—some with minor, other with more pronounced deficiencies—results have not always been uniform. There are, however, many pitfalls in such investigations which have recently been reviewed by the Committee on Diagnosis and Pathology of Nutritional Deficiencies of the N.R.C.[1]

On the whole, the mass of positive findings, which indicate the major importance of this problem, is impressive. An appraisal of the evidence has recently appeared in *Bulletin No. 109* of the National Research Council.[2] More recently, a symposium on the subject at the Twenty-Second Annual Conference of the Milbank Memorial Fund has brought out the marked progress in this field and the great importance which may be attached to it.[3]

In the first of six articles in this symposium, F. F. Tisdall emphasizes the fact that not markedly but slightly or moderately deficient diets—not classical and florid but less intense, long standing deficiency states—constitute the public health problem of nutrition in this country. He cites examples of demonstrations that these conditions interfere with attainment of full physique, performance, and health, and that improvement in diet and nutrition brings corresponding betterment in these respects.

The beneficial influence of satisfactory nutrition on growth begins in the womb. The causes of many complications during pregnancy and of difficult labor have long been obscure. As for the condition of the infant, it has been sometimes maintained that under conditions of nutritional adversity the expectant mother suffers all the untoward effects while the fetus is protected. Yet no less than 10 studies bearing on the relation of nutrition to pregnancy have yielded results indicating the bene-

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[1] Committee on Diagnosis and Pathology of Nutritional Deficiencies, National Research Council: Principles Underlying Studies of Nutrition Pertaining to the Influence of Supplements on Growth, Physical Fitness and Health; with a Comprehensive Bibliography of the Studies. *Arch. Int. Med.*, 74:258–79 (Oct.), 1944.

[2] Committee on Diagnosis and Pathology of Nutritional Deficiences, National Research Council: *Bulletin 109.* Inadequate Diets and Nutritional Deficiencies in the United States; Their Prevalence and Significance. Washington (Nov.), 1943.

[3] Six articles, *Milbank Mem. Fund Quart.*, 23:39–108 (Jan.), 1945.

fits for both mother and child of improved nutrition. Reporting on one of the latest and completest of such studies, Bertha S. Burke has submitted evidence that puts the matter beyond peradventure. A relationship was found between the expectant mother's dietary habits and the course of her pregnancy and parturition, particularly the incidence of toxemia and difficult types of delivery. Also the dietary practice of the expectant mother during pregnancy was directly related to the condition of the infant at birth and within the first two weeks of life. Thus, not only the expectant mother's course in gestation and labor, but also the health of the child is dependent on nutrition during pregnancy. This principle is ready for application in prenatal programs, both for improving the course of pregnancy and labor and for further lowering infant morbidity and mortality rates.

In another article in the symposium Joef Warkany records that with experimental animals he has repeatedly induced by faulty diets developmental defects of a type often attributed to genetic causes. Such abnormalities as syndactylism, brachydactylism, and cleft palate occurred when the maternal diet was deficient in riboflavin; changes appeared in the ribs when vitamin D was inadequate. Even more recently, developmental defects have been reported as appearing in the eyes of the young when the maternal diet is low in vitamin A.[4] Thus, certain anatomical abnormalities developed *in utero* are directly related to maternal malnutrition.

As life goes on, the status of nutrition continues to exert a vital influence on growth and development and efficiency. Learning ability is one of the qualities directly affected by nutritional status. Nutrition, in its demonstrated or suspected effects on capacity for heavy work, precision, and dexterity, and in its relation to fatigue, comes into direct relation with industry. In the Milbank symposium, W. H. Forbes reaches the conclusion that, though definite proof on most points is lacking, light or moderate or even hard physical work adds primarily to the calorie requirements and raises little, if at all, the needs for protein and vitamins A, C, D, and K. The need for the B complex may be increased somewhat but probably less than in proportion to the extra calories until the work becomes hard or exhausting, when it almost certainly rises considerably.

In some industries a major concern arises from the hazard of exposure to occupational poisons. To reduce the risk, our basic measures designed to lessen exposure to toxic material may be reënforced in certain cases by increasing the resistance of the workers through better nutrition. W. E. Crutchfield, Jr., reviews present knowledge concerning the effects of specific types of poisonings upon human nutrition and of improved nutrition upon resistance to these toxicities.

[4] Warkany, Josef, and Schraffenberger, Elizabeth. Congenital Malformations of the Eyes Induced in Rats by Maternal Vitamin A Deficiency. *Proc. Soc. Exper. Biol. & Med.*, 57:49–52, 1944.

It is gratifying that the Government has been mindful of its opportunities to help in the solution of the problems bearing upon nutrition in industry. Explaining the vast network of interrelationships involved, Robert S. Goodhart reviews the organization and accomplishments of the Government's industrial feeding program and indicates the major problems to be solved. Under Federal encouragement and advice, substantial progress has been made in this difficult and intricate task.

Finally, nutrition has its applications in the important area of geriatrics. The influence of dietary deficiency upon the skin and hair of animals is well known; and recent observations in Newfoundland,[5] where dietary deficiency is serious and widespread, revealed women in their twenties with the harsh and wrinkled skins of ancient crones. It would be surprising if such changes in the skin were not reflected in more vital organs.

All this is of importance to the health officer in connection with his programs of maternal and child welfare, of tuberculosis control and industrial hygiene. It also emphasizes the need for a broad attack on the fundamental problem of nutrition as a national issue. Such an attack should be made along at least three lines. We need to continue and supplement national and state regulations providing for the preservation or addition of essential food elements in certain staple foods. The A.P.H.A. has, for example, adopted an official resolution calling for the continuation of the enrichment of bread after the war and the *Journal of the American Medical Association* endorsed this policy in a recent issue. In the second place, we must continue and expand our program of popular health instruction along nutritional lines. Third, we must work for the development of facilities by which the people can actually apply the knowledge they acquire, particularly through the development of adequately supervised industrial cafeterias. A beginning has been made; but we are, on the whole, far behind England and the Soviet Union in this respect.

FDA Photo

[5] Medical Survey of Nutrition in Newfoundland, August 13–30, 1944. Adamson, J. D., Jolliffe, N., Kruse, H. D., Lowry, O. H., Moore, P. E., Platt, B. S., Sebrell, W. H., Tice, J. W., Tisdall, F. F., Wilder, R. M., and Zamecnik, P. C. *Canad. M. A. J.*, 52 (Mar.), 1945.

"The overall objective of a food and nutrition program must be to insure that enough food of the right nutritional quality actually gets to every consumer."

Improvement of the Nutritional Quality of Our Food Supply

By Dr. L. A. Maynard
Commissioner, Nutrition Division
New York State Emergency Food Commission

It is well recognized that malnutrition is caused to a much greater extent by a diet which is inadequate in nutritional quality rather than in amount as measured by calories. Of course there must be enough of the right kind of food produced. But much can be done to make better use of the food supply that we have. This has been proven by the experience of countries which, during the war emergency, have had limited food supplies. In the United Kingdom, for example, there has been 10 per cent less food available for civilian consumption than in the United States, and there has been a real shortage of the more desirable foods such as meat, milk, and fruits. Despite this fact, the nutrition and health of the people in England are better than pre-war, and there is less malnutrition than in the United States. This accomplishment has been made possible by better food management of the supplies available.

The overall objective of a food and nutrition program must be to insure that enough food of the right nutritional quality actually gets to every consumer. Obviously there are many aspects here involved. The aspect which I shall discuss deals with measures for the improvement of the nutritional quality of our basic foods as pro-

—FSA Photo (Jack Delano)

"A large portion of our people have not had the purchasing power to enable them to have proper, sufficient nourishment . . ."

duced and the conservation of their nutrients from production to the consumer's table. Here lie large possibilities for improving the health of the malnourished, and particularly for increasing the effectiveness of food programs for a post-war world.

With the development of the newer knowledge of nutrition beginning early in this century, and of the discoveries of the diseases resulting from dietary deficiencies of the vitamins, mineral elements, and certain amino acids, the need for the so-called protective foods to supply these deficiencies became recognized. In the case of the foods of plant origin there thus resulted a large increased production and consumption of vegetables and fruits. In producing these foods the goals of horticultural practice have been increased yields and market quality. Varieties have been selected for high yield, disease resistance, drought resistance, and cold resistance or heat resistance. Yields have been increased by fertilization and other cultural practices. Ability to withstand shipment to market and to appear attractive to the consumer has been held in view from seed-time to harvest. These things are important, but in all of these developments comparatively little attention has been given to the real reason why protective foods are needed, namely, to supply the nutrients in which the diet is otherwise deficient. From this standpoint we need a consideration of yields of nutrients as well as of tons or bushels per acre. Yields may be restored on depleted soils by appropriate measures and yet the food crops produced may have a low nutritive value. There is ample evidence that some of our protective foods have become less protective through a neglect of these considerations. Market quality is important but it is not enough. Very tardily nutritional quality is now coming in for attention.

Nutrition and Production

Recent research has shown that it is possible to improve the nutritional quality of our food supply as produced. One way to do this is through the breeding and selection of crops for nutritive value as well as for yield and other qualities. Cabbage is particularly valuable in the diet because of its vitamin C content. Recently, new varieties have been developed at the U. S. Breeding Laboratory which are markedly superior to the standard varieties in vitamin C content as well as in yield. Similarly, high-yielding sweet potatoes, richer in vitamin A, have been developed. There is a possibility of developing apples two or three times richer in C than those now consumed. This would mean a big contribution to better nutrition because apples are widely grown, readily stored for nearly year-'round use, cheap, and liked by everybody. Other examples might be cited.

Soil factors also influence the nutritive value of food crops, particularly their mineral content, and there are climatic and harvesting factors which are important, also. Fresh tomatoes as marketed in the winter frequently have only one-half as much vita-

min C as those grown and marketed in the summer. The intensity of sunshine just prior to harvest may make a difference of 25 per cent or more.

With respect to foods of animal origin, the principal factor causing nutritive variations is the feed of the animal. Butter produced in winter has less than two-thirds as much vitamin A as that produced in summer. It would be entirely possible to improve greatly the nutritive value of this winter butter by feeding practices which would not increase the cost of milk production and which would benefit the cow as well.

The present discussion has indicated that nutritive values can be improved in production. There is knowledge which can be utilized in practice now. Leads are available for further research with high promise of results of practical value. While it may take years to learn all the possibilities, results can come rapidly if there is public interest and support for such a program. A better food supply can be obtained without increased cost. The program is applicable to all basic foods. It thus holds particular promise for improving the diets of those who, because of low income, find it especially difficult to obtain adequate nutrition from foods within their reach.

Conserving Nutrition

Apart from the question of production, much can be accomplished in improving our food supplies by conserving their nutritive values from production to the table. Certain modern methods of food manufacture which make foods easier to market and more attractive to the consumer result in large losses of nutritive values. The modern milling of flour is an example. Here most of the vitamins and minerals and the better proteins are lost in the process. War-time needs have caused certain countries, notably England and Canada, to change milling practice in the interests of conserving nutrients which are lost in the production of refined white flour. In the United States we have met this problem by enriching white flour and bread in some of the nutrients which are removed in the milling process. Some such program should certainly be continued post-war. There are other manufacturing processes which need attention.

Enrichment of bread restores food values lost in milling.

In canning, dehydration, and other processing procedures, there are losses of certain nutrients. Much has been learned as to how to minimize these losses. Many processors are now giving attention to this aspect, but more use could be made of the knowledge that is available. The new developments in quick-freezing hold particular promise for the conservation of nutrients.

—USDA Photo (Knell)

In dehydration and other processing procedures there are losses of certain nutrients.

Many fresh fruits and vegetables lose much of their nutritive value in storage, shipping, and marketing, even though they remain attractive and palatable to the consumer. Nutritive value obviously doesn't count unless a food is actually consumed, and thus palatability is essential. But many have learned by experience that attractiveness in the market is not synonymous with palatability, and neither is it any guarantee of nutritive value.

Improvement along these lines must be stimulated by an enlightened consumer interest in the nutritive value of foods as purchased, and a general realization of the importance, in terms of the real worth and purpose of a food, of conserving its essential constituents. A grading system which is based on appearance alone may fall far short of measuring the true value of a fruit or vegetable in terms of dietary need.

Before a food reaches the table, further significant losses may occur in the home. Cooking always results in some loss of vitamins. With many all too common practices most of certain vitamins may be lost, and minerals as well. Knowledge is available for the common foods and for the vitamins in question as to cooking procedures which will keep these losses to a minimum. The thiamine loss in cooking certain vegetables, for example, may run over 50 per cent, but it can be held down

to 20 per cent or less. Education which reaches every home and everyone concerned with food preparation is the obvious remedy here.

As an example of the savings that can be made in vitamin values from production to the table, let us consider the case of potatoes. They are seldom mentioned as having any special importance in the diet. Yet they do make a substantial contribution of vitamin C and this contribution could be much greater as the following estimates show.

The potatoes actually consumed in 1943 by our population contained, at the time of harvest, on the average, enough vitamin C to meet over half the daily needs for this vitamin. But they probably lost 50 per cent of this original value in storage and in getting to the kitchen. Here they still contained enough of the vitamin to supply at least 25 per cent of the needs. But cooking, as commonly practiced, is responsible for further important losses. Thus, a food supply which could potentially meet over half our needs for vitamins may be reduced in value by 75 per cent or more before it reaches the consumer's table through losses in storage, marketing, and cooking. It seems reasonable to believe that at least half of these losses could be saved by taking advantage of information we now have. Since potatoes are a cheap, everyday food, consumed in particularly large amounts by the low-income groups, a contribution of special importance to the solution of the malnutrition problem where it is most serious could thus be provided. In our nutrition programs we tend to put too much emphasis on some of the richer, but more expensive and less available sources of nutrients, and too little on the cheaper foods we eat every day in much larger amounts.

Nutrition Education Needed

In order to take advantage of the possibilities I have discussed of improving the nutritional quality of our diet, education all along the line as to their importance is essential. An overall program of food and nutrition education must do more than teach the individual correct eating habits. Those responsible for the production of food and for its handling in the various industries concerned, in the market, in public eating places, and in public and private institutions, should understand the factors affecting its nutritive value. Private business should be encouraged to exert a greater influence for better nutrition as well as an influence on the kinds and forms of food which people eat. The general public needs a better understanding of the diverse factors involved in the production and distribution of the foods which are required to make good nutrition possible. It must realize that it is important to get all the nutritive values we know how to obtain from our food supplies, and it must be willing to support research to get new facts.

But here we must decide whether efforts in these directions are really worth while. There are those who feel that with the new industrial developments in the production and marketing of specific nutrients, notably the synthetic vitamins, the

importance of nutritionally superior natural foods in the diet becomes less thereby. The extreme view is reflected by the following statement in an issue of Harper's Magazine:

"Factory production of milk—a purer and more healthful beverage—is sure to come and at cheaper prices. Milk is 87 per cent water anyway, and it will be relatively easy to substitute a machine for the cow as the agent for converting cellulose (grass) and such into a liquid we call milk."

Few would subscribe to such a statement, but all too many are being led to believe by the ballyhoo of advertising, and even by the overenthusiasms of some scientists, that a shot of vitamins can improve any diet.

Vitamins are only a few of the 40 nutrients which we now know the body needs, and there are doubtless values in our natural foods as yet undiscovered. It is estimated that the American public will spend $200,000,000 in 1944 for vitamin and mineral pills and similar products. Such a development is in many respects harmful rather than helpful to the general cause of nutrition.

With the tremendous productive capacity of industry which has been built up during the war we may expect an increasing opportunity and an increasing pressure for the incorporation in the diet as such, or as fortified foods, of synthetic vitamins, minerals, and probably amino acids. How far these developments should go is a question involving many vital considerations both physiological and economic. The physiological answers cannot be satisfactorily arrived at by a few rat experiments or short-time clinical observations. The question of a dietary regime which is best from the standpoint of the entire life cycle and for all peoples is at issue.

Inevitably, increased emphasis on fortified foods and synthetic supplements, in the interest of solving current problems of malnutrition, will result in a decline in the interest of either producers or consumers in the nutritionally superior natural foods and in their decreased use in the diet. Such a result would tend to be a lasting one. Thus the possible benefits of what may be thought of as emergency measures should be weighed against the much more permanent effects on the character of the food supply that is produced and consumed. From this long-term standpoint it appears to this observer that a program for the production of foods of superior nutritional quality and for conserving their nutrients from the farm to the table should take precedence over any general program of food or diet fortification. But this is a public question which should be answered in the interests of all.

"You cannot determine any nutritional program unless you have a meat supply."

Nutrition and Food Supplies

By Alfred H. Benjamin

President, Anglo-American Trading Corporation

SENATOR DESMOND, when you invited me to attend this conference today, I had no idea of the extensive nature of this program, that Government officials would be present, and I made a few notes as I went along and I would just like to refer to them.

The Mayor,[1] in his opening talk, said the quality of the meat today was superior to 25 years ago. Let's see the record 25 years ago.

I appeared at such a meeting as we have here today before District Attorney Ford in his food inquiry before Chief Magistrate McAdoo. I was bringing in at that time hundreds of millions of pounds of meat, and there was no such thing as utility or commercial meat being sold in this market. And the meat that the Mayor referred to as being equivalent or superior, in my judgment, today is inferior—the worst type of meat I have seen sold in New York in 30 years.

Now, here were the prices of October 6, 1914, retail prices, in New York:

Sirloin steak, 22 cents a pound; porterhouse steak, 22 cents a pound (I am reading from the New York Herald); round steak, 22 cents; lamb chops, 20 to 23 cents; mutton chops (in fact that was Canadian), 18 cents; legs of mutton, 15 cents; roast beef, 14 to 22 cents (now 60 to 70 cents a pound).

At that time I was bringing in meat from Australia, New Zealand and the Argentine, and the meat that came in was of a high standard quality, but the quality of our meat was even better than what the Mayor said on the choice cuts. So the Mayor is quite wrong about that. I think the Mayor at that time was a Captain in the American Army in France.

I think our problem today is that the meat of the world is not properly distributed, and that is caused through the bungling of the War Food Administration in Washington. They have not got practical men to run the business.

I have been in contact with the War Food Administration since 1939. I go down to Washington about once every two weeks and spend three days there.

Our problem is this: Great Britain controls the food of the world because we have given Lend-Lease to enable her to do that. She has now tied up Australia for the next two years, tied up New Zealand and tied up the Argentine, and if we want to buy a pound of meat from those countries, we have got to go to Great Britain.

Now, one of the gentlemen this morning—I think it was Dr. Wil-

[1] Mayor F. H. La Guardia, of New York.

liam Ockey of the War Food Administration—said we have a better food supply. How can you concede that we have a better food supply when 15,000 retail stores at the present time are considering closing up the 25th of this month? (December, 1944—Editor) That is a very serious situation.

We see on the plains of New Zealand, not Australia because they have a drought there, but on the plains of New Zealand, they are killing 325,000 tons of lambs, and they have no refrigerated ships to take that anywhere.

They put an embargo into effect in May, which prevented any shipments from coming to the United States, of lamb, and you know, Senator, it is very hard to get lamb of any kind, in any store in New York City. In fact, all the retailers tell you in order to get good lamb, they have got to buy five utility, and of course they are going out of business gradually.

Lend-Lease a Factor

I think the first thing we have got to do is to stop the Lend-Lease definitely to Great Britain. If we don't, we won't have any food on the home front, because at the present time the Army is getting 60 per cent of all the beef, mutton and lamb—that is quality goods—the rest goes to the civilian population.

Now we have got to produce a lot in the factories such as munitions, tanks and guns. These people have got to be fed. They cannot on what we have got to offer them.

You cannot buy a turkey in New York City today. There is not a turkey in any store. That is not a right condition. At this time last year you could buy all the turkeys you wanted. It is only encouraging the black market and those people who have the money go out and cover the black market. I don't blame them; they have got to do it if they want to eat.

You can go to a restaurant something like the Stork Club, and pay $10 for a meal and get the best steaks that you want, but you know families, people that have got three or four children in the family, if they buy a leg of lamb, the points are gone and the lamb is gone. There seems to be something wrong in the set-up of the OPA, the WPA and the Foreign Economic Administration, definitely. And that is the reason we have the black market today.

I was sorry I didn't have the privilege of hearing Professor Maynard. (Prof. L. A. Maynard, of Cornell—Editor). I had to go to another luncheon engagement. It was very interesting. The Minister for Australia gave an interesting address on how we were going to feed the people in the Far East, China. I asked the same question. I said, "Why is it Britain is tying up all the food of the world?" He said, "That is a big question. I could not answer it, but the combined food board in Washington could."

To have proper nutrition in this country at the present time, we have got to determine why the British have got all these countries tied up, because Argentina is just as important a factor in the distribu-

tion of meat of the world as this country is, because she has got as many cattle and as many sheep, and we think the day is not far distant when we must let our bars down and not have this meat situation of the world controlled by Great Britain.

I want to congratulate one or two of the speakers that I had the privilege of hearing this morning. I was very interested in what Prof. Harper (Prof. F. A. Harper, of Cornell—Editor) had to say, but he made a mistake about Australia. He said they lived on mutton. Australia doesn't eat mutton; they ship it all. They only eat lamb and beef.

Nutrition Related to Supply

When I appeared here 25 or 30 years ago, I was dealing very extensively, as I have been ever since, in the meat situation, and I suppose I am very well known to the rank and file of the meat trade. But it has been terribly bungled because they have not had practical men in Washington handling this meat situation, and you cannot determine any nutritional program, unless you have your meat supply.

". . . malnutrition and ill health on the industrial front can seriously retard production of war material."

Nutrition in Industry

By Dr. Thomas Dobbins
Medical Director, Servel, Inc.

BEFORE the war, industrial health practices in this country were restricted almost entirely to the study, prevention and cure of various occupational diseases and accidents. Until recently, little effort was made to correct deficient eating habits of industrial workers or to recognize the fact that nutrition can prove a tremendous factor in speeding the Nation's war production program.

This situation still remains prevalent in spite of the fact that medical authorities agree that ordinary disease such as prevails in the community is responsible for nearly 15 times as much loss of time as trade hazards and accidents combined.

Dr. Victor G. Heiser sums up this problem as follows:

"It is not unreasonable to expect that by attacking the conditions which are responsible for 90 per cent of the absenteeism, a great reduction could be made that would be profitable to the employer as well as to the employee. Up to the present time the emphasis has been almost entirely placed upon occupational hazards, and these are only responsible for less than 10 per cent of the absenteeism."

Although there is little factual evidence as yet available to indicate the relationship between malnutrition and the incidence of sickness, absences, and accidents among industrial workers, the importance of the quantity and quality of the diet for maintenance of good health has been demonstrated repeatedly.

Numerous surveys conducted by Dr. Robert S. Goodhart on behalf of the Office of Defense Health and Welfare Services, including several made recently among employees of important war industries, show that essential food deficiencies are more common than generally recognized.

Out of this fact-finding work by the Government, and from many other private investigations, has arisen a serious interest in the industrial nutrition problem. This interest has been given great impetus by the war program since malnutrition and ill health on the industrial front can seriously retard production of war material.

To many industrial plants now converted to war production, this nutrition problem is especially acute. Under stress of longer working days, 60-hour weeks, and considerable overtime, deficiencies in workers' diets show up very quickly. These deficiencies are reflected in the loss of valuable man hours, more time off for sickness, and a general slowing down in efficiency.

Servel, Inc., began to face this problem several years ago—in fact, as early as 1939 when we began to

convert our refrigerator plant to the production of war material. In this conversion program it was soon apparent that nutrition would have an important bearing on war production schedules. In discussing this problem with governmental agencies at Washington, we were encouraged to conduct educational work among our employees both at home and in the plant to determine what could be done in correcting poor eating habits.

Preliminary investigations quickly revealed a serious need for an appreciation of proper eating habits among our workers. It was found that the average worker and his family had only a hazy idea about foods recommended for nutritive values and what constituted a balanced meal. The type of meals consumed at home and in the plant cafeteria were anything but satisfactory for their healthful qualities.

Three-Fold Program

From these investigations, we evolved a three-fold nutrition program: (1) to improve home eating habits of workers and their families; (2) to provide more balanced meals in the company cafeteria; and (3) to raise standards of home-packed lunch boxes. These recommendations were then presented to our management for approval and received unqualified endorsement. In fact, much to our surprise, we were given special funds for this purpose, including the redecorating and refurnishing of the cafeteria.

First step in the execution of this program was to improve the home eating habits. This was largely educational in nature, because most of them had not yet been reached by the Government's nutrition program. It was also discovered that the Government's food recommendations were not thoroughly understood and must be put into more simple terms.

To provide the right approach for this study, we began conducting experiments among test families. These experiments began with breakfast on Sunday morning and concluded with the evening meal on the following Saturday. Each housewife was then given a full week's menus, a separate menu for each of the three daily meals, and recipes for dishes with which they were not familiar. During this period, we asked each family to report daily comment on the food served, and give us an inventory of food left over. From these records, it was fairly simple to judge the quality and quantity of the food used, individual preferences, and the consumption by various members of the family.

From these experiments we devised a simple, nutritional yardstick which was compiled into a small booklet known as the Nutrition Guide and Meal Planner. In it we outlined the Government's food rules and offered suggestions as to how they could be easily applied every day. The booklet also contained basic information on food products, vitamins, proteins, and calcium, as well as test recipes for two full weeks.

Distribution of these booklets to our employees, together with subsequent testing programs, fully convinced us on the value of this

educational work. In nearly all cases, families reported actual savings on food expenditures, better balanced meals, and a brand-new interest in eating for health.

The second step in our program was concerned chiefly with meals served in the plant cafeteria. Here arrangements were made to offer balanced meals at low prices which would appeal to the majority of employees.

Realizing that it was practically impossible to change eating habits overnight, we began our campaign by placing large nutrition posters and Government food rules in prominent locations. Each employee was also given literature explaining the need for fitness foods and the kind of foods he or she should eat every day.

Finding early in this phase of our campaign that it would be difficult to convince workers of the value of nutrition strictly through educational methods, we developed a formula and merchandised it as the "Victory Lunch." This lunch included a meat, a salad, a green or yellow leafy vegetable, enriched bread and butter, and a bottle of milk—all at a cost of only 30 cents.

Although the "Victory Lunch" was not made compulsory, every attempt was made to feature it on the daily menu. In addition to the usual means of advertising and sales promotion, such as posters and literature, we adopted the contest idea. Each person ordering a "Victory Lunch" was given a ticket for a weekly drawing on $5 worth of War Stamps. The results of this little contest were quite amazing—the "Victory Lunch" proved our best seller almost overnight.

Other Progress, Too

By stressing the importance of the "Victory Lunch" we have also made considerable progress in increasing the consumption of salads, vegetables, fresh fruits and milk—items that formerly were little in demand. All this is very gratifying because we know that more than half our employees—those who eat in the cafeteria—are getting at least one well balanced meal every day.

It is interesting to note here what has happened when some foods were placed in different positions on the serving counter. Formerly salads were more or less hidden down about the middle of the line. Now they appear at the head of the line and are the first to greet the eye. This has resulted in a tremendous increase in salad consumption among both men and women.

Another indication of the success of this program is the increase in milk sales. Comparing sales during a three-week period before and after the "Victory Lunch" was inaugurated, the sale of half-pint bottles showed a gain of 118 per cent; pint bottles a gain of 70 per cent; and even quart bottles a gain of 49 per cent. The total volume of milk increased 81 per cent—and most of those sales were in connection with the "Victory Lunch."

The third phase of our in-plant nutrition program was that dealing with the home-packed lunch box. This was of considerable impor-

tance since we find that about 35 per cent of our workers carry lunches to work. Here again we started with an experimental program among test families and later developed these findings into a special lunchbox booklet.

This booklet contains information on basic foods required for heavy work and practical suggestions for packing lunches. It has been—and is being—distributed to all employees with considerable success. This has been such a popular item that we have reprinted the booklet on several occasions.

The industrial nutrition problem, however, is becoming even more acute under point rationing. Increased demands for plant feeding have necessitated additional equipment, and a second cafeteria is being opened this month. It appears that we shall have to feed some 6,000 employees in the plant cafeterias, which is a tremendous undertaking. Our main problem at present is to secure enough food that will guarantee the continued success of the over-all program.

With the knowledge that we have gained, we are sure that the fundamentals of good feeding essential for adequate health will be maintained for our personnel regardless of future restrictions. This is imperative for we feel our program is doing much to maintain happy and pleasant working conditions. This in itself is a patriotic contribution to the war effort which benefits both the employee and the employer, as well as the community at large.

"We are not as sturdy a race now as we ought to be."

Some of the Roads to Health

By Lieut. Col. Edmund L. Zane

It has been my experience on cattle ranches in the mountains of California that it is quite easy to maintain perfectly healthy herds. All you have to do is to keep them out of contact with diseased stock, and give them clean, wholesome food. They depend mostly on grazing, and this at times is supplemented with clean forage, cured in the sun in the old fashioned way, and clean fodder. I have helped in the round-up; when all the cattle were counted, checked, and tested by the state veterinarian, he found them to be 100 per cent healthy. And this is customary on that ranch, and the other ranches in the locality. The cattle are healthy simply because there is no cause to make them ill.

Raw Milk Ideal Food

On these cattle ranches, we raise the stock for beef, and not for the dairy business. But on some of the ranches on which I have lived, we set aside certain cows for milking, for the use of the people on the ranch. We always drink this milk raw. Still, on a lot of cattle ranches in the West, they use canned milk. They call it the "tin cow." There is no sense to that; it is nothing but laziness. I don't know much about the dairy farms out there; probably they are about the same as here. But the point that I want to bring out is that this raw milk from healthy cows is an ideal food, especially for growing children. It greatly helps their growth, health, strength and endurance. In Arizona and Texas, as far as I have seen, these conditions seem to be about the same as in California.

But in many localities, in the East and elsewhere, they seem to have a good many silos on farms. The crop is cut; and put at once into the silo green and moist. It is not cured in the sun at all, or dried in any way. So it ferments and rots. It has the bad odor of swill, due to putrefaction. When fed to the cows, it causes auto-intoxication, and puts them in a receptive condition to contract disease. Consequently their disease is just a matter of time, either with or without contact with unhealthy stock.

For that reason pasteurization has been devised to kill some four kinds of pathogenic germs. It is unfair to Louis Pasteur to name this process after him. He introduced only pasteurization of wines, but not of milk, which is quite another thing. The objection to pasteurization of milk is that it also kills the spawn of the beneficial lactic ferment. Now, raw milk from healthy cows forms this beneficial lactic ferment, and a beneficial flora in the intestines, which tend to resist pathogenic germs. This is as Nature intended. Now, Dr. Jesse Mercer Gehman, of Paterson, N. J., remarks on this—as did Metschnikoff. He says that pas-

teurized milk, on the other hand, does not have this beneficial effect at all. He says that it only putrefies in the intestines, causing auto-intoxication. It is far better to drink no milk at all than pasteurized milk. This auto-intoxication only puts us in a receptive condition to contract disease.

Mothers wonder why their babies are sometimes gassy, and have the colic, and other maladies, sometimes mortal. This may be partly to blame.

In some localities there seems to be a difference of opinion among dairymen, with whom I have discussed this subject. Some believe they can make more profit with the silos. While others think the silos cause too many sick cows, and are no good. Both sides of the argument, however, would do well to consider primarily the health of the consumer. And profits only secondarily.

Now, there is still another side to the question. Many people distrust raw milk. This is the belief that it may have been taken from diseased cows; and that one can contract from it undulant fever, like that fatal to Edsel Ford, or tuberculosis, or typhoid. And this belief may be well founded.

Farmers in localities where silos are in common use have warned me against drinking raw milk, saying that there is a considerable number of diseased cows in every herd in those districts. And this is a generally accepted belief, both in and out of farming circles.

I make no accusation against any inspectors or officials. It is not they, but the system, that I allege to be wrong. The evil has probably gone beyond their powers to correct. It would do no good to try to make a scapegoat of somebody. All we want to do is to find out the truth. In any case it is my duty as a citizen to present these allegations to the Committee for consideration.

For another point, there is no justification for any brand of raw cow's milk to be permitted to have a higher ceiling price than any other milk. With the foregoing in mind, I recommend that the Committee repeat an experiment which has been made in Scotland. That they set aside about 20 baby calves, of equal condition, and bring them up bottle fed. Feed 10 of them on pasteurized milk, the same as is sold in our grocery stores, and fed to our children, and feed the other 10, the control, on raw milk from cows which have been examined and known to be healthy. Make a record of all operations, the weights of the calves on certain dates, with their growth, their health, and their mortality. Illustrate the report with photographs. This experiment should be very interesting and instructive.

There are, no doubt, certain dairies selling raw milk, which is perfectly pure and wholesome. They should be protected and encouraged.

The Federal Pure Food and Drugs Act gives the people no protection whatever. It gives them only a false sense of security. So people must depend entirely on the state. The faults are simple to correct; for it is just as easy to have healthy cows in the dairy business

as in the cattle business. Cows are never ill without a definite cause.

Loss of Vitamins

I have also a suggestion on another subject. The French scientist, Dr. Paul Carton, says that "the pressure cooker is the graveyard of the vitamins." And the Committee on Nutrition of the National Research Council confirms this, saying that it kills about 96 per cent of the vitamins.

Now, 96 per cent is practically all. So when you use a pressure cooker, or eat food which has been canned that way, which means practically all canned food, you make yourself liable to serious vitamin deficiency diseases. And then you get ill, and don't know why. That may be why. A previous report of this Committee quotes several eminent doctors in good standing who do not believe in synthetic vitamins—the pills, capsules, and tablets so widely advertised and sold. And some other doctors who are not convinced. So here again, there is difference of opinion. Therefore, I recommend that the committee make another practical test, to check the one against the other.

Let the Committee set aside a number of test rats of equal condition. Feed half of them on pasteurized milk, white enriched bread, white sugar, white polished rice, and canned goods—the same as some of us use and give to our children. It is believed that this regimen may cause in the rats vitamin deficiency. But we cannot be sure until the experiment is tried. If they have vitamin deficiency, then give them the vitamin pills and tablets nationally advertised to correct any vitamin deficiency. Let us see whether they can cure the rats. Make a record of all procedure, the growth of the rats, their weights, their health, and their mortality; and take photographs.

The other rats, the control rats, let us feed on raw milk, whole wheat, raw fruits and raw vegetables. Make a record of everything with them, like we do with the others, including photographs. Finally compare the results.

Diet Test Suggested

Now I want to recommend to the Committee the third experiment, which I believe should be very profitable and instructive to the state. It is a test of a diet, which has given amazingly good results, both in England and in the United States. Among many others, Sir Stafford Cripps, the eminent British statesman, and his family confine themselves to this diet all the time. As a result, they have wonderful health. He is never sick, he is always on the job, and in A1 condition.

The committee might experiment with this same diet on some of our children. Some group of children who are now being boarded, lodged and schooled by the state. They would be the best, because they can be controlled and observed. It would be a great privilege for the group selected. It is possible to make of them beautiful, happy children, glowing with perfect health.

Feed them raw milk from cows

or goats, specially selected and tested by the State Veterinarian, and known to be absolutely healthy. The principal part of their diet should be fresh, ripe, raw fruit, including citrus fruit; and salads of lettuce, cucumbers, radishes, onions, tomatoes, soybeans, peas and other raw vegetables which happen to be in season. But exclude spinach, which is no good.

Give them as a secondary part of the diet a lesser amount of starchy foods, as pototoes, brown unpolished rice, whole wheat bread, and whole grain porridge.

But all starchy foods should be cooked. Likewise such tough vegetables as broccoli and beets should be cooked enough to make them tender enough to eat. For proteins, give them butter, eggs, and fresh cheese. Use only iodized salt. Let them have plenty of nuts, dried figs, dates, olives and raisins; with the understanding that candy, white flour crackers, snaps and pretzels, lacking in some ways, will be excluded. Exclude also all cadaveric food, alcohol, vinegar, tobacco, tea, coffee, the cola drinks, and all pills, cathartics, laxatives, aspirins, cod liver oil, synthetic vitimins, and drugs of all kinds. With that diet they can never be constipated, and no laxatives or drugs will ever be needed.

Then Have Them Walk

With bulldozer and road scraper, smooth a path in the right of way, beside the road to school and church, so they will be out of danger of the traffic. Then have them walk, or ride bicycles, instead of riding on the bus. Have their instructors take them on frequent enjoyable hikes, suitable to their age and endurance. Give them setting up exercises, to correct their posture and to make them supple.

Have them all compete in running on the track, and suitable athletic contests; this, of course, in moderation. This instead of a few stars doing it all, while the others look on and applaud.

Encourage other rugged out of doors sports and games for all; and cleanliness, politeness and nobility of character. Take notes of all procedure, height, weight, measurement, physical tests, and the condition of their health. Note improvement made. Take photographs. These children should always be in a healthy condition, resistant to disease. And none of them should ever have colds, tonsilitis, whooping cough, grippe, fever or infantile paralysis. That alone would make the experiment worthwhile. It is far better to prevent the infantile paralysis this way, than to try to cure it afterwards.

Note particularly the progress they make in their studies, and their conduct. I believe that with good judgment, there will be among them no juvenile delinquency, or anything serious. Because we give them plenty to do, and put particular emphasis on character. The experience and the information gained by this experiment should be extremely valuable to the state.

I would not recommend this experiment with children, if it were at all risky in any way. But it is not. It is a development of systems tried time and time again in England, and which give excellent re-

sults. And it is already done to some extent in this country. We should be able to do equally as well as the English. It cannot possibly harm any of the children in any way.

I personally know a young American married woman, who lives and thrives on this diet. She is 34 years old, but she appears to be 10 years younger. She has never the least difficulty in maintaining exactly normal weight—never the least overweight or underweight. Her health is always perfect. She never has a pain nor an ache. She has perfect teeth. She is strong, active, well proportioned, and very beautiful. She enjoys tennis, swimming, and other sports; also gardening. She helped her husband to build their home; which he did mostly with his own hands. She even painted a church. Other men, women and children can easily do the same, profit thereby, and make a sturdy American race.

We are not as sturdy a race now as we ought to be. The difficulty is that we are all slaves to habit. But these results can be achieved by all who have the fortitude and character to overcome habit. The same for rich and poor. It costs no money; you even save money on your budget. And your efficiency is greater. Let us get out of our heads the erroneous idea that illness "just happens," or that the cause is at all mysterious or hard to determine.

Every illness has a certain definite cause, or causes. Generally the cause is that we are in a toxic condition, receptive to disease, from inactivity and auto-intoxication. On the other hand, when we are fit, we are in a resistant condition, and disease does not take hold, even during an epidemic like the grippe.

In case we meet with an accident or are wounded, if we are in fit condition, this system will have given us that vitality which is the greatest help to the surgeons, and may even save our lives.

There are those who think that nutrition alone can keep us well, but it cannot. It is insufficient alone. Likewise some people claim that exercise and sports will do it. But, they, alone, are insufficient. Others say that sunshine and fresh air will do it. And still others say relaxation, or put their faith in sanitation and cleanliness. These are all admirable, but, taken alone, they too are insufficient. Any one of these things, by itself, is insufficient. We need a rational combination of all of them, according to the laws of Nature.

"Only in the past 20 years have we . . . learned something about how to get proper nourishment."

Nutrition Advances

By Frank E. Gannett
Publisher, The Gannett Newspapers

Let me first commend the work that this Joint Legislative Committee on Nutrition is doing. I consider nutrition one of our most important problems. We have been, over the centuries, grossly ignorant about food. Only in the past 20 years have we begun to discover the values of various foods and learned something about how to get proper nourishment.

It happens that I long have had a personal interest in this subject. It seems to me that I have been dieting all my life. When I was a boy, I was frail because of digestive trouble. Doctors then didn't know much about foods, but they limited me strictly in my eating. After being graduated from Cornell, I spent nearly a year and a half in the Philippines and there again became the victim of malnutrition. Polished rice and the other foods there were entirely inadequate, and I left the Islands weighing only 119 pounds, a victim of ignorance about food. Naturally I have been deeply interested in this subject ever since that unfortunate experience. I have studied all the information I could find and have done my best to follow a diet that would give me health and energy.

A year ago I was in England for a month, and there again I faced the food problem. Like you, I had heard of the restricted diet in Great Britain, but until I personally experienced the great shortages, I did not realize how serious is the situation. Since the war began, five years ago, the British have had to depend on greatly decreased importation of food. Butter and meat have been hard to get. In fact, for most of the population they do not exist, except in a very small degree. Staying at one of the best hotels, I had a piece of butter about as large, and about as thin, as a postage stamp, at breakfast, none at noon and only a taste at dinner. An allowance of a quarter of a pound of meat a week is equivalent to about one

This chemist is adding vitamin D concentrate to milk.

lamb chop. Eggs in the shells are seldom seen, but there are, of course, egg and milk powders. They have no citrus fruits at all, although we in America feel that orange juice and grapefruit juice are almost essential in our diet. We had a limited amount of fowl and fish. A meal prepared without butter, of course, is rather tasteless at best. We would have for a meal a good thick soup, brown rolls without butter, a slice of tough chicken, brussels sprouts and some cooked turnips or other vegetable. There was little fresh milk, most of it allocated to children and nursing mothers. The desserts were unsatisfying without sugar content, and we had to make shift with a sliced apple or something of that sort, baked without cream or sweetening.

British Diet Thin

Our meals at the hotel of course were much better than the average person in England enjoys. The British people have become accustomed to their thin, unattractive, monotonous diet. You miss your tomato juice, your citrus fruit, your ice cream and ordinary cream to which we are accustomed. Coffee in England is notoriously bad. In the morning I would have cornflakes with a little blue milk and saccharin, then scrambled eggs made out of a powder—not very good—and a sausage that was 75 per cent soybean meal mixed with a little chopped meat. The menu of a soup and brussels sprouts and then brussels sprouts and a soup, day after day, became very tiresome. The vegetables, I might add, all taste alike—all like brussels sprouts.

After a few meals of this sort, I was not very enthusiastic about the food. But I followed the British custom of cleaning my plate to the last crumb. The British do not complain about this diet; so why should I, thought I. How the British people have endured this for so long a time stirs my wonder and admiration.

I found that the English eat the food not so much because they like it or because it satisfied the taste, but strictly for sustenance. Apparently it is adequate because Lord Woolton, then Minister of Food, told me the health of the people was good. In fact he had statistics to prove that the general health was better under this restricted diet than it had been before the war when there was plenty of everything to eat.

The British people appeared to be sufficiently nourished, but there has been a tremendous increase in tuberculosis throughout the British Isles and other deficiences show up as in tooth decay. Possibly the unvaried diet in the long run will prove in some respects harmful to the public health. During my month's stay I suffered no ill effects from the diet, but I do admit that I rejoiced when I could sit down again to a good meal such as we get in this country, even under our rationing system.

The Work at Cornell

This experience in Britain intensified my interest in nutrition. But even before that, my interest had been stimulated by what we are

doing at Cornell University. I happen to be a member of the Board of Trustees of Cornell and was from the beginning especially interested in the development of its School of Nutrition established in 1941, the first of its kind in the world. Before this School was established, we at Cornell had watched the surprising results obtained from research in regard to feed for chickens, turkeys, hogs and cattle. Unbelievable benefits resulted from proper feeding of poultry and animals. We began to ask ourselves why we shouldn't do for human bodies some of the things we were doing for animals? The belief grew that there was an unlimited field, one that had hardly been touched.

I remember several years ago that in a certain district of a midwestern state many hairless hogs had appeared. Investigation showed that the soil on which the feed for these hogs had been grown was lacking in certain chemical properties. The soil was treated, and hogs afterward were as hairy as any others. This little experience shows the ramifications of research, and indicates that if we are to have satisfactory nutrition, we may have to go back to the content of the soil. Cornell had its laboratories for testing soils, for testing foods, and it was natural that the School of Nutrition should gradually develop into the great institution that it now is.

You have heard a most interesting and stimulating talk by Dr. L. A. Maynard, head of the Cornell School of Nutrition, who is recognized as a leader in this great field. Dr. Maynard is a very modest man, and I doubt if he has told you even a fraction of what he could tell about the work at Cornell and what we have learned in the last few years.

Watching the work there, I have come to believe that not only our physical well-being depends on food, but also our attitude toward life. Our success or failure may depend on what we eat. We simply have no idea as yet of what the right food can do for a person or what harm the wrong food will do. I am convinced that a very high percentage of all of our ills is due to eating the wrong food or to the inadequacy of nutrition elements due perhaps to faulty preparation, processing or handling.

To reinforce my statement, I should like to tell you a little about the special diet table in operation in the Home Economics Department at Cornell. The results obtained there are simply amazing. Diabetic students, those with severe allergy problems, ulcer cases, and those who could not otherwise comfortably stay in college, eat at the diet table regularly throughout their academic year. Many other students go to the diet table on advice of the University clinic, to correct overweight, underweight, malnutrition and other ill effects of bad eating habits.

Dr. Charlotte Young, in charge of the diet table, is most enthusiastic over results. A trained dietitian, she says that "the changes in human beings which can be wrought with good feeding of a cooperative subject are breathtaking."

And then in an interview on the subject, she went on to give examples of results.

Take the case of Jim, an abundantly alive, self-assured, attractive young man with a sparkle in his eye. "I wonder if you would believe," Dr. Young observed.

Sunflower Seed Meal Seen Good Source of B Vitamins

The possibility of eating cake, bread or rolls made from sunflower seed meal, because it is a good source of B vitamins, has been suggested in an article sent to newspapers by *Science Service,* which states that the discovery was made by Professor and Mrs. Harry G. Day at Indiana University, Bloomington, Ind.

Fed to rats as their only source of B complex vitamins, sunflower seed meal, the report observed, was superior to wheat-germ meals and far superior to defatted soybean meal, but decidedly inferior to brewer's yeast. Following this phase of the discovery, which was made by Prof. Day and Ezra Levin, of Monticello, Ill., Mrs. Day demonstrated that sunflower seed meal, described in "Science" as "a light gray palatable powder," could be "satisfactorily blended with white flour and corn meal to make appetizing baked goods."

Sunflower production has been increasing rapidly, *Science Service* states, for the sake of the oil obtained from the seeds. After removal of the oil, the residue has been used for livestock and poultry feeding.

"that a year ago he came to us a scrawny, red-eyed 'unthrifty' looking, mousy chap with scarcely a word to say or a spark of animation? And yet he did; now he, along with 20 or 30 others, brings pride to our hearts."

Next is Jane, whose bouncing 125-pound body, clear skin, and changed appearance bear little resemblance to the 108-pound, acned, tired girl of a few months back. Beside her is Susan, who, in spite of her newly-diagnosed duodenal ulcer, can go comfortably to college, eating with a congenial crowd and, by seeing others, realize that she alone doesn't get all the bad breaks.

Miss Young's enthusiasm was matched by the students' own. Ruth had made "beautiful progress" at the diet table; her skin was better, her hair had more life, and she gained 15 pounds which made all the difference in the world in her general appearance. After her meal at the diet table, she commented: "You know, Miss Young, I never used to have dates and do things, but now I never walk home from class alone."

Voluntary, spontaneous tributes such as "I didn't know it was possible to feel so good!" "My landlady says I don't look much like the fellow who came here last fall," or "How wonderful to have some-

one else worry about my diet!'' are common.

There is nothing solemn or morose about the table's special boarders—in fact, Miss Young places high therapeutic value on the gaiety prevalent there.

All students entering Cornell consult Miss Young during their routine physical examinations. Nutrition counseling is thus a cooperative enterprise between physician and nutritionist. All students showing evidence of nutritional problems have a chance to do something about them early in their college careers.

When there is no room at the diet table, or when their cases do not require this solution, students get an eating program from Miss Young and follow it on their own. Here, too, results are ''splendid,'' she declared, adding that students are ''singularly honest'' about what they eat and don't pretend they've been following a diet as adults sometimes do.

As an example of what such students have done, Miss Young referred to 5 foot 2 ''Sally'' whose pride and pleasure is a smooth size 14, where last summer it was 20, brought about by a slow consistent 34-pound loss. Or ''Dorothy,'' whose weight fell from an unattractive bunchy 193 pounds to a much trimmer 162, and milk for the first time assumed a place of importance in her eating.

And there is ''Paul,'' a six-foot senior with allergies fairly cropping out of him, and an aversion to meat. ''It is a real thrill,'' Miss Young averred, ''to see him radiant, with a 15-pound weight gain.''

Do you wonder that seeing such results as these, I should be enthusiastic over this question of nutrition?

I am sure that the research at Cornell is only just the beginning of a great program that will be carried out there under Dr. Maynard's direction. Every year we shall know more and more about food, and from the knowledge thus obtained will come, in my opinion, without exaggeration, the greatest benefit ever given to mankind.

Public Education Needed

One of our problems is to educate the public. People are, I find, most eager for information about nutrition, and I believe that the public will be most grateful for the truths that will come out of our laboratories. I feel that our newspapers are doing a grand job in spreading the knowledge that they get on this subject. Already many of our schools and colleges are giving close attention to these developments, and I am hopeful that in a few years we shall have enough knowledge about food to prolong life, lessen illness and make us a stronger, more vigorous people.

It seems to me that what we need most is reliable information on this subject. For instance, the public is eager to know the truth about vitamins. Dr. Maynard today has thrown much light on this subject, but the general public just doesn't know yet how effective vitamins are or how they should obtain them. I should like to see more publicity on the research that is under way.

It is possible that this Committee could help in this direction in whatever recommendations it may make.

We in the newspaper business have known for a long time that the public is deeply interested in articles that will promote health and they will be more than glad to get the truth on this great nutrition problem.

In this country we can produce almost every known food, and there is no reason why we should not, with the knowledge that is now being obtained, lead the whole world in health and well-being. Frederick the Great said that an army travels on its stomach, and we are going to find that a nation's strength, its progress and in a large measure, its prosperity, will depend on what we eat.

". . . food on the farm does not guarantee good nutrition in the child."

Nutrition Education in the State of New York

By Dr. George D. Stoddard
New York State Commissioner of Education

Schools have long been concerned about the health and physical fitness of children, and they have recognized the important place of a well balanced diet. However, it is clear that food on the farm, like food in stores or warehouses, does not guarantee good nutrition in the child. Even food brought into the home in sufficient quantity and variety may be damaged through poor methods of cooking or preserving, and the big meal may come when the children are not at home.

Hence the schools have developed programs embodying these features:

(1) More and better food for growing children.

(2) Demonstration of good practice in preparing foods.

(3) The teaching of health in relation to diet.

In all these respects the statewide program of school lunches makes an effective contribution. Some statistics and statements furnished by Miss Treva E. Kauffman, Supervisor of Home Economics Education in the State Education Department, give us a clear picture of the scope of the present program.

With the aid of War Food Administration funds, we have been able to furnish school lunches in 735 schools. Over 77,000 children partake of these lunches and 61,000 children in addition receive milk each day.

In 46 schools, the WFA lunch program is sponsored by Parent-Teacher Associations. Other community groups occasionally sponsor the program.

Syracuse University, New York University, the State Teachers Colleges at Buffalo, Plattsburg and Oswego, Columbia University, Cornell University and Pratt Institute assist in developing the school lunch program.

Fifteen area conferences were held in the Fall of 1944. They were attended by over 900 persons, including superintendents, principals, school board members, teachers, nurses and community leaders. At these meetings both the nutritional and the educational values of the program were stressed.

Rural School Lunches

The school lunch in rural areas is one of our chief problems. Only about one-fourth of the small rural schools maintain a lunch program, the children bringing cold food which may not be satisfactory for the main meal of the day. Such

schools have difficulty in rendering adequate nutritional service. Facilities for storing and cooking food are often negligible; the teachers may lack training in food preparation. In some rural communities a safe milk supply cannot be guaranteed. However, supervisors from the State Education Department and local leaders are working together to improve the situation.

The way in which it is hoped to make further progress is contained in the report of Dr. E. R. Van Kleeck, Director of the School Lunch Program, to the State War Council:

1. Conduct area meetings early in the Fall for school administrators, school lunch managers and others.

2. Make supervisory visits to schools to observe the program, have conferences with teachers and administrators, participate in staff meetings, and work with groups and volunteers.

3. Attend conferences, share in programs and conduct individual conferences of school administrators, teachers, nutrition and health workers.

4. Approve schools for the use of Federal funds.

5. Plan and share in training schools or school lunch conferences for school lunch cooks and managers. We need about 30 of these training schools, and some groups should meet twice during the year. Technical institutes, teachers' colleges and other schools will share in these training schools.

6. Continue work with the lunch programs in the Indian schools and other State institutions, such as Rome School for the Deaf.

7. Prepare needed materials and give information on available sources.

(a) Bulletin on the School Lunch.

(b) Revise "Lunch in the Rural School," working with an advisory committee made up of rural teachers, district superintendents, and others.

8. (a) Work with home economics teacher training institutions on the pre-service training of school lunch managers.

(b) Work with teacher-training institution on pre-service training in the school lunch of all elementary and secondary teachers.

(c) Work with technical institutes, colleges and universities on pre-service training of school lunch managers.

(d) Work with colleges and universities on pre-service training in the school lunch for school administrators.

9. Continue emphasis on the food preservation program.

10. Work with organizations and agencies interested in the school lunch on the State, county and local levels, including the Department of Institution Foods of the New York State Home Economics Association.

11. Organize a State School Lunch Committee made up of representatives of various organizations and agencies who have a concern for the school lunch.

12. Hold a State conference of city directors of school lunches.

13. Continue working with the college consultant committee.

—USDA Photo (Forsythe)

Children must eat to grow right. Both health and happiness are reflected by this child, over a school lunch adequate and nutritionally right.

14. Plan summer session courses on the school lunch for summer 1945.

15. Keep parents, teachers and community workers informed.

Nobody regards nutrition as exclusively the concern of the schools. The guiding concepts call for increasing awareness on the part of all persons and agencies concerned with the health of children and youth. The final goal is understanding and self-reliance. We want parents, children and teachers to improve their food habits and to know why the problem is not simply academic.

Children, like all other animals, must eat right to grow right. Their strength, health and happiness are closely related to a persistent search for the completely adequate diet. Anatomic structure, vision, resistance to disease, and the energy required for the give-and-take of everyday life are all dependent, to some degree, on the simple habit of eating good food in proper balance. Over the years, the degree of physical fitness that can be ascribed to adequate nutrition is a highly indicative measure of national health and safety. Modern life reaffirms the importance of the Greek ideal: a sound mind in a sound body.

". . . nutrition can raise our national health level and our American standard of living."

Nutrition For Tomorrow's Better World

By Dr. Edwin R. Van Kleeck

Assistant New York State Commissioner of Education

Good nutrition promotes that major educational objective, good health. Already better nutrition has brought increased economic productivity, improved social behavior, and a healthier and happier people. The better the public understands this, the greater the progress attainable.

Selective service and school medical inspection records show that much progress is still needed, if, for example, teeth defects of school children and young men, the most numerous of all defects and partly due to diet, are to be lessened. The public's need for more information is obvious for people are bewildered by nutritional claims about beer, candy and vitamins. They need to be told more about those food deficiencies called "hidden hungers," which though oft-times not evident for years, nevertheless cause illnesses frequently otherwise attributed.

The Desmond Committee is advertising nutrition's importance to general health. It is publicizing research. Research can predict the effect on health of specific foods. It supplies data on the food-energy requirements of different types of jobs—just recently on the job of flying planes at high altitudes, for example. It can give us the correct facts about the vitamins and the other food essentials, like minerals, about which our million New York State boys in service have learned much.

A principal means to better health, especially in these troubled times, is the school lunch. Many thousands of homes have been left without a father, brother, son, husband. Factories run 'round the clock. Instead of breakfast at seven and dinner at six, we have swing and night shifts, and thousands eat at 3:00 P.M. or 1:00 A.M Children are left to prepare their own meals, often with little supervision and less assurance of a balanced diet. Thus, that one meal a day in school becomes vitally important.

Lunch Program Gains

Spurred by the Federal grants-in-aid, the lunch program, despite increased Federal red-tape, is now a third ahead of last year in this State. Happily, Dr. Harold Schaff, the State War Council's executive secretary, by financing two more nutritionists and another stenographer, is now doubling our ability to help your schools.

Why do we push the optional Federal program with the three-fourths of the schools unfortunately not in it? Because, with it, schools can feed more children unable to pay, improve nutritional quality and lower costs. The neediest children nutritionally sometimes do not get the lunch or milk.

—USDA Photo (Knell)

It's winter outside but in this Monroe County (NY) consolidated rural school a hot, sustaining lunch fortifies children against the cold.

Often, too, tinier schools most needing the lunch lack it. Too many children eat too little breakfast and especially need 40 per cent of their day's food intake from the lunch. Others rush through breakfast, rush to school, and drink no mid-morning milk. Many eat only a cold lunch, minus vegetables, fruit and milk. Where the big home meal is at mid-day, many miss that also. Too many buy "refreshment" items instead of a complete lunch. Sometimes our milk program is impeded by lack of a safe milk supply or by the smallness of the two-cent subsidy. Naturally, many children get thin and undernourished.

More favorably, we can report that in 65 public schools in the Summer of 1944 food was preserved for cafeteria use in the Winter. Simple training will be given school cooks in conserving time, energy and nutritive values.

Unhappily 3,500 one-teacher schools have no cooks. Through the schools' Farm Production Program, through cooperation with the War Council's Farm Manpower Committee and with the State PTA, through new pre-service and in-service courses in mass-feeding and nutrition for teachers, through revised institutional management courses, and through our recent 15 area conferences, progress is being made. Energy-needing adolescents are being told their requirements of an increased food intake and are being advised to eat especially butter, cheese, cream, bacon, cookies, peanut butter, jelly and jam, baked beans, ice cream and rice pudding. Our new course, "Production, Conservation and Processing of Food for Family Use," will help. So will discussion of family food problems by neighborhood groups, like those in the Afton Central School, Chenango County.

First, then, nutrition can raise our national health level and our American standard of living. Second, one means is the school lunch. Now, "what next?" How shall we prepare for major changes in technology, in eating habits, in food preservation practices, and in our agricultural economy? Our Department, like all of you, desires to help upgrade both the farmer's economic status and the consumer's health and well-being. Both goals are advanced by increased consumption of the seven basic foods, the energy, body-building, protective foods—milk, green and yellow vegetables, fruits, eggs, meat, potatoes, and whole-grain cereal products. Happily, most of these are abundantly produced here.

Remember:

First, A variety of foods makes for improved health and nutrition.

Second, Our great farm State can produce this variety.

Third, The world's greatest food market is at our door.

We need:

First, Optimum production and distribution of the essential nutrients.

Second, Adequate economic status and purchasing-ability for all.

Third, Improved eating habits and extended knowledges, as, for example, of fatigue's relation to malnutrition and of the physical and psychical dangers of overdone extra-curricular activities or too strenuous competitive athletics.

Education in Nutrition

Then we can, by averting the maladies of malnutrition, match preventive medicine's miraculous contribution to human happiness. Through sound, tested, up-to-date, and *organized* nutrition education, we can pass on to the general public that which nutrition research discovers. There is no adequate substitute for organized instruction. The apprentice training that served yesterday for the trades and professions does not today adequately utilize or capitalize research's great accumulation of health knowledge. More of this organized nutrition instruction is fortunately given more pupils in this State today than ever before. This is true, even though agriculture pupils are unfortunately fewer in the 310 high schools with such departments, high school

homemaking enrollment is off a quarter, and new high school homemaking departments are few. But adult homemaking enrollments are up a third, the proposed new technical institutes for high school graduates will help, school health classes are more numerous, and economics and geography classes are getting more instruction about the world food supply. Moreover, from 1918 to 1940, our State's high school graduates increased from 20,000 to 120,000 per year.

Despite a 36 per cent drop in the number of farms in the State since the 1885 high, food production is at its peak—supreme testimony to the efficacy of modern methods. To retain our present business and to obtain new business, an ever-better product, more reasonably priced, is always in the long run most effective. Hence, all concerned should attack our problems together—the farmers, processors, distributors, and the State departments like Agriculture, Commerce, Health, Public Works and Education. For example, better transportation may hurt as well as help our competitive position. With huge cargo planes, our proximity to the city market is not alone enough. Only through production and marketing research, and through the development of better varieties, can we keep ahead. Hence, all welcome new and improved varieties from Cornell and the Geneva Experiment Station. We welcome the higher-yield, smut-resistant oats, the extension into the State's hill country of cauliflower and snap-bean growing, and the "little Maine" potato development in Steuben and Tioga counties. We are glad that the trends toward more nearly complete utilization of the better land in the more favorable locations and toward the further abandonment of poor and badly-located land will probably continue.

After Production, What?

But after production, what? With a sufficiently high and well-distributed national income, consumption of New York's more plentiful crops can go up and up, even after Europe no longer needs American surpluses. Our own American people can eliminate any New York State "surpluses" by consuming them. Thus we can avoid any return to a combination of undernourished millions and spoiling crops.

Distribution supplements production. Our farmers are now largely "out of the mud." Today we plan new highways for the rapid moving of fresh foods, especially fluid milk. With snow removal partly state-financed, the hazards of Winter transportation by autotruck have largely disappeared. To hurry the Empire State's farm products to urban areas, the next steps are superhighways and high-speed throughways to the heart of every large city.

In processing, including food preparation and preserving, improved attractiveness, "taste appeal," and nutritional qualities are needed. Developments in food preservation, including dehydration and quick-freezing, will have startling effects. The family quick-freeze units and the family locker

Nutrition Education Important in the Elementary School

With a national emergency comes a general recognition that health is a national asset. Research has brought conclusive evidence of the relation of food to health. Studies of food practices in the United States made in 1935–36 revealed that about one-third of American families have poor diets. It was estimated that in about half the cases the cause of poor diets was not inability to afford suitable food, but lack of knowledge of the fundamentals of nutrition or failure to apply such knowledge to food selection. This situation has led to increased attention to the problems involved in teaching people to choose the right foods.

Food habits are formed in childhood; therefore, nutrition education is particularly important in the elementary school. A lasting improvement in the food habits of pupils depends upon the development of a carefully planned, school-wide program built around their everyday food experiences and designed to reach both pupils and parents. Such a program should be related to the prevailing food habits and the food resources of the locality.

—Bess Goodykoontz,
Assistant U. S. Commissioner of Education

in the community unit are here to stay. The question is: which state's produce will be in those lockers?

Finally, the Joint Legislative Committee on Nutrition has paved the way for a comprehensive, statewide nutrition program, which we hope will ultimately reach every citizen, young and old. After the war, let us continue this and the other nutrition committees. Today we want such phases of a rounded nutrition program as school lunches. We want them, not because they are substitutes for the courage of fighting men or for fleets of airplanes. We want them because, since the requirements for victory are indivisible, school lunches are important in total war.

After the war, let us hold our ground. Let us advertise the importance of health and well-being for all the people, for people with empty stomachs are unhappy, inefficient people. We want a physically fit population and a properly-managed food supply, for we know that civilization does "march on the feet of a healthy and instructed electorate."

"... Nutrition education is futile unless accompanied by learning."

Teaching Practical Nutrition to School Children

By Dr. Bertlyn Bosley

Associate in Nutrition, Teachers College
Columbia University

—USDA Photo (Knell)

Improvement of the nutritional status of our people, particularly of boys and girls, is the concern of all.

IT GIVES me great pleasure to talk to you today on the subject assigned to me. We have come a long way in the newest of all sciences, nutrition. From our present vantage point we can see the vast area still to be explored before our scientific knowledge begins to be complete. Yet despite the multitude of unknown facts we have developed already, an excellent scientific foundation which promises much for the future health and happiness of our Nation. It promises much, that is, if the people understand the information well enough to use it.

Although the research worker in

the laboratory often is inclined to feel he is making progress slowly, nevertheless the advances he has made have far out-distanced the application of the information. This is undoubtedly due to the even slower development of educational techniques employed to interpret laboratory results to the public. While this may not be the sole reason we must consider this explanation as a possible cause. Otherwise it is a little difficult to account for the fact that so large a percentage of the population of the United States is still not well nourished, although nutrition facts have been taught in the schools for over a quarter of a century. Perhaps the static condition of the educational methods in nutrition can be explained by the fact that the science of nutrition deals with food. The selection of one's daily meals has been considered an individual prerogative. Therefore, the individual's acceptance or rejection of scientific information about foods was also his prerogative. But our ideas about this right are changing somewhat. We have come to realize that the strength of a nation is largely determined by its health. Therefore, the responsibility for good health ceases to be an individual one when it affects an entire nation. Since the fact that nutrition plays a very important role in health has been so well established it is obvious that the improvement of the nutritional status of our people, and particularly of our boys and girls, is the concern of all of us. In the promotion of better health of children the schools not only can assist but should want to assist in the development of better food habits. This entails more than merely setting up food rules for the children to follow because certain foods are said to be good for them. It necessitates first a recognition, on the part of educators, of the needs of the children with whom they are working, and next the use of a teaching method which will permit the boys and girls to learn by means of actual experiences suitable to their environment and their comprehension.

What Technique Is Best?

In contemplating the techniques best suited to bring about desirable food practices, educators need to realize that these may be accomplished by exactly the same techniques used to develop other habits and attitudes. That is, the concepts of learning which apply to so-called fundamental subjects in the school curriculum apply also to the subject of nutrition. For example, few children are able to obtain a useful knowledge of mathematics without some practice with figures and problems. The child learns by doing. He is not expected to learn all there is to be taught about mathematics at one time, instead he learns one thing at a time. Also, he is given a sufficient amount of practice so that the skill may be permanently acquired. As his knowledge increases the solution of problems becomes more difficult, requires additional information, thus adding interest as well as knowledge. But always a sound foundation is prepared before the

truly technical aspects of the subject are presented. These same concepts are recognized in the development of other customary school subjects and should likewise be used in the education of children in nutrition. Learning one thing at a time; learning by doing; ample time to learn; and the building up of a sound, practical background of knowledge before technical information is given. (This implies a well-planned, graduated program to study supplying new information each year.) All are essential if the nutrition information taught is to be understood well enough to be practiced.

In addition to techniques, educators must appreciate some other important factors that definitely influence the child's application of sound nutrition information. The first of these is food habits.

By the time a child enters the first grade in school, he will possess certain food habits which he has been building up by means of at least three meals a day, 365 days a year, for six years. This is a total of 6,570 meals, during which time he has had ample opportunity for developing very definite food likes and dislikes. These cannot be ignored when one plans nutrition work for children. These already established food habits may easily be the result of the economic status of the family, or of emotional conditions existing in the family, as well as evidences of family food patterns.

Consequently, the teaching of practical nutrition to children can be brought about only as educators apply the concepts of learning to this science, and recognize at the same time the need for suitable educational techniques which will enable the children to develop desirable food habits and a real understanding of the role nutrition plays in personal health. All this should be developed with full consideration for the economic status of the children being taught, and the relative usefulness of the information in their daily lives.

Such a suggestion is not a figment of the imagination, but a tested procedure that has received the approval of the educators who have adopted it in the past 12 years. From the experiences gained by years of research and application in the field of nutrition education a plan has been evolved for the elementary school which is practical, interesting to teachers and children alike, easy to follow, and flexible enough to permit its use in any school situation.

Acquiring Good Food Habits

The premise adopted in setting up a practical nutrition education program for children is that good food habits can be acquired more easily through practice in eating food than in merely talking about food. When a food is prepared by the children in the regular classroom and eaten by them and the teacher, the participation in the preparation, and the approval of the food by both classmates and teacher, profoundly influence any child's attitude toward that food. The novelty of the situation holds an appeal for him and as one food or type of food is served again and

again in slightly different guises over a period of weeks, the child acquires a taste for it. If such a lesson in learning to eat one food or type of food is given once a week during an entire semester of school the habit becomes sufficiently well established to assure its continuance in the lunchroom and at home. A child can learn to like a food as easily as he can learn to count providing he is given the opportunity to practice in a non-emotional environment where the approval of other children his own age serves to motivate his desire to learn.

Thus, in the first three grades of the elementary school the sole aim of nutrition teaching should be to develop in the children favorable attitudes towards the foods they need to know and like. This can best be accomplished by capitalizing on the common knowledge that most young children like to eat. The late Professor Mary S. Rose used to say, "Never a lesson without food." All teachers who have followed this rule agree it is an excellent one. The children look forward to their "nutrition parties" which provide them with lessons in cleanliness and good manners as well as teaching them to like the flavor and texture of foods they should be including in their daily diet.

By the time the children are ready to enter the fourth grade they should eat willingly all foods, prepared in some manner or other, that form the foundation of an adequate diet. With this attitude toward foods as a basis, they are ready to extend their study of nutrition. They are ready to find out for themselves the difference food can make in growth and health. In other words, they need to realize that food is eaten not only because it is good but also because of its role in the maintenance of body health.

The particular objective of the fourth and fifth grades has been expressed as one of showing children that "Food Makes a Difference." This was chosen because children's interests in growth are especially keen at these ages. Foods prepared and served in the classroom are still a part of each lesson but in addition simple experiments are conducted which show the effect of a food upon the growth and health of a small animal.

Learning By Seeing

This procedure is initiated for two reasons. In the first place the children learn by seeing, rather than by hearing that a food can influence an animal's health. In the second place such a procedure begins to develop a scientific attitude toward the study of nutrition which is indispensable to the real understanding of this science.

Most children in the fourth and fifth grades look upon animals as pets. The children delight in taking care of them. They want them to grow, to look well and to be playful. Anything that hinders the normal development of the animal is a matter of grave concern. For example, two guinea pigs of the same age and weight at the beginning of an experiment are given a diet of whole grain cereal and milk which the children have learned

previously are good foods. One animal is given some raw carrots in addition. At the beginning of the experiment both animals will grow well and no difference in appearance will be evident. However, by the end of the third week the animal receiving the vegetable supplement will, by increased weight, by the condition of the fur, and by general appearance and behavior show beyond question, that the eating of a raw vegetable each day makes him grow better, look better and feel better than the animal eating cereal and milk but no vegetable.

There will be an immediate request on the part of the children to give both animals this raw vegetable. The speedy improvement in the appearance of the animal formerly deprived of the vegetable is sufficient proof for the children that the food effecting such a difference in the animals is necessary for boys and girls.

All such experiments are conducted in the fourth and fifth grades without reference to the scientific words employed by nutritionists. These are reserved for the time when the "whys" of childhood are more than mild curiosity and are accompanied by experiences which permit the understanding of the more scientific materials. This is the next phase of the nutrition study.

Why food makes a difference is the theme developed in the upper grades of the elementary schools. By the time children have reached the sixth grade they are well enough developed both mentally and physically to carry on a more scientific type of study. The foods that children should eat are still the basis of their work in nutrition. The use of animals, too, is continued but in a slightly different fashion. The study of nutrition is developed by allowing children to "take foods apart" in order to discover, for themselves, some of the dietary factors hiding in the foods. Taking out of a food a vitamin or a mineral is a real thrill for a child. When this vitamin or mineral is omitted from an otherwise adequated diet of an animal and added to the diet of a twin animal the changes occurring in the growth and health of the animal by the omission or addition are sufficient to teach the importance of the individual nutrient. With such an experience as this no teacher ever need say, "Eat some raw fruit every day, because it contains vitamin C."

Learning other food sources of the specific nutrient studied, and how much of the food boys and girls need is no chore, and no temporary acquisition of knowledge. The experiences which the child has had provide him with a real desire to apply his knowledge, because he has had an opportunity to *learn* the reason for doing so. Incidentally it also provides some understanding of the scientific methods which are used in furthering our knowledge of nutrition.

Following such a plan means that upon completion of eight years of elementary school, children through their experiences in the classroom should *"possess"* good food habits. These result from the enjoyment of the flavor of the foods and an

understanding of what those foods contribute to health.

Ease of Instruction

It is not difficult for teachers to teach nutrition in this way. On the contrary, it is far more interesting for teachers and children alike to deal with new and visible materials each year, instead of memorizing the same set of "rules of good eating," year in and year out during the eight years.

Such a plan does not indicate the introduction of an extra course in the curriculum. Nutrition education is by no means the only aspect of health to be taught to children, but considering the role food plays in life it is obvious that it has been given too little consideration in health classes. Teaching nutrition in the schools by means of text books is not only a superficial, but an antequated method of teaching a science. Nutrition should fit into the health program, but it should be a well planned part of the program, not an incidental or accidental one.

A program of this kind does mean, however, that teachers need to possess a better understanding of nutrition than many of them have now. A teacher must know enough to guide the children in their study. She needs to know more than she expects to teach the children, else she will find herself unable to answer their questions intelligently. Likewise, she needs to understand the science well enough to recognize the fads and fancies that prevail in order to avoid the dissemination of false information. Without good sound knowledge of the subject she will see no particular value in applying nutrition information to her own daily food choices. If she does not believe in practicing the rules of good nutrition, herself, she should *never* teach nutrition to children. By the same token, if a school does not apply the principles of good nutrition in their lunchrooms, they should make no effort to teach nutrition in the classroom.

At the American Public Health Association meeting held here in October, Dean Rosenau, of the School of Public Health at the University of North Carolina, remarked that years of experience had shown him that, "Education is futile unless accompanied by learning." For teachers and children alike, certainly nutrition education is futile unless accompanied by learning. Memorizing a rule for good eating, and passing an examination in nutrition are not criteria of successful nutrition education. Daily practice alone is evidence of learning.

Such learning we know has far-reaching implications. As Professor Matill, of Iowa, writes, "Since time began poets and seers have dreamed of a far-off divine event, toward which the whole creation moves. When this event does appear, better nutrition as one of the fruits of real democracy, will have helped to ring in the thousand years of peace."

—Photo Service (Cornell)

Research: Analysis of foods for proteins is being conducted by this girl student at Cornell University's School of Nutrition.

"To provide an integrated program of research and teaching in foods and nutrition."

Nutrition at Cornell University

An Outline of the School of Nutrition

Compiled by George A. Yaeger
Editor, The Committee Report

A RECOGNITION that the diverse aspects of nutrition called for an integrated program, with emphasis on the importance of nutrition education and research, brought into being The School of Nutrition of Cornell University at Ithaca, New York. The school was established in 1941, in the words of its Director, Leonard A. Maynard, Ph.D., "to mobilize all of the facilities of the University for the development of a program of teaching and research which would cover the field of nutrition in its broadest sense."

"Thus, the school," Dr. Maynard also stated[1] "is recognized by the University as 'an organization in which the Colleges of Agriculture, Arts and Sciences, Engineering, Home Economics, and Medicine are cooperating to provide an integrated program of research and teaching in foods and nutrition.' It is organized to serve all the diverse aspects of the field, in contrast to the limited service now generally provided by medical schools, colleges of agriculture and home economics, or other institutions, working separately along much narrower lines."

In establishing a School of Nutrition, the first of its kind in the world, Cornell broke with tradition. In so doing it "razed the academic walls that tend to surround the various colleges and departments of the University and * * * mobilized their facilities to serve the diversified fields of food and nutrition."[2]

The field of nutrition deals with the maintenance and improvement of health through dietary means. It is concerned with proteins and vitamins and other specific nutrients required for body needs. These needs must be translated into available foods. Hence, nutrition must also deal with the processing of food and the engineering problems concerned, with storage and distribution, with sanitation and home preparation, and with production with special reference to nutritive values. In addition, there must be an understanding of the economics involved all along the line. These manifold aspects of the field are in turn dependent upon the knowledge and techniques of the basic sciences of chemistry, physics, and mathematics, and of physiology and bacteriology.

Must Consider Man and Animals

The broad field must include a consideration of the welfare of animals as well as of man, because of

[1] Paper, "The Cornell School of Nutrition," L. A. Maynard, December, 1944.
[2] Ibid.

the interrelated problems concerned. Both draw on the same basic food supply. Many industrial operations produce both human and animal food products. How animals are fed affects the nutritive values of milk, meat and eggs.

The importance of nutrition education and research has been emphasized by the war emergency, while postwar problems will present an even greater challenge and an even greater opportunity, particularly in the field of the food industries. That many aspects of nutrition, from food production to consumption, have been dealt with piecemeal or entirely neglected has been recognized at The School of Nutrition.

Thus, The School of Nutrition embraces:

College of Arts and Sciences—To provide the knowledge and techniques in the various basic sciences which underlie the nutrition field.

College of Engineering—To provide the facilities for instruction and research in the design and operation of machinery and equipment used in food manufacture, preservation, and distribution. Its School of Chemical Engineering, with its new building and equipment which are unexcelled anywhere in the world, is giving special attention to food processing in relation to nutritive value.

College of Agriculture—With an Experiment Station at both Ithaca and Geneva, to provide the facilities and leadership which are required for research and teaching in the production and distribution of foods. The pioneer activities of the Geneva Experiment Station in the freezing preservation of foods have resulted in contributions exceeding those of any other institution. The Laboratory of Animal Nutrition (also part of the College) is recognized as a national leader in this field, and as a pioneer in dealing with the interrelated problems of animal and human nutrition. The Department of Agricultural Economics of the College specializes in the economics of production, distribution, and consumption of human and animal foods.

College of Home Economics—To deal with the problems of home needs and preferences for foods and for home equipment, and of the preparation of foods for the table. Workers in this College have also made outstanding contributions in determining nutritive requirements.

University Clinic—To provide (at Ithaca and in the College of Medicine, New York City) facilities for instruction and research in the relations of nutrition to health and disease. From the time of Lusk the College has had a distinguished record of accomplishments in the physiology and biochemistry of nutrition.

U. S. Plant, Soil and Nutrition Laboratory—Recently established as the only one of its kind in the world, to co-operate actively with the School in work dealing with improvement of the nutritive qualities of food crops through better methods of growing and processing them.

From the Soil to the Table

Thus, these various elements provide a nutrition service which figuratively has its roots in the soil and extends across the board to the family table. All of the elements have been integrated at the school into an effective working organization.

An example of how the school attacks a problem and of the results being accomplished lies in its activities in the field of freezing preservation. From an extensive field survey it was concluded that freezing preservation was bound to have a major development as war restrictions were removed. It was also evident that many problems of vital interest to the consumer and the industry required attention. Accordingly an integrated research program was arranged. In the College of Home Economics was set up a consumer survey as to needs and preferences in home freezing equipment and community locker services. Chemical engineers tested the efficiency of home freezers on the market, and began work on modified designs which would combine operation efficiency and economy with consumers' requirements as indicated by the survey. Biochemists and nutritionists studied the efficiency of various designs and techniques of operation on the nutritive value and palatability of the products, and the influence of different cooking procedures.

Agriculturists were brought in to investigate the suitability of different varieties of fruits and vegetables for freezing. Similarly, with respect to animal products, slaughtering and curing problems as related to freezing preservation received consideration. A blueprint has been prepared for a freezer-locker plant to take advantage of the latest engineering findings and experience, as well as of the viewpoints obtained in the consumer study. An economist was put on the job to study the costs involved all along the line. This combined attack resulted in findings scheduled for publication and which aroused great interest among the industries concerned, and which should be helpful in guiding the new developments to the best interests of all.

Other Research Activities

Other research activities which have represented an integrated attack by the school have dealt with the development of new food products of superior nutritive value, as well as of products which could be used to supplement foods in short supply in the war emergency. Thus, the school has pioneered in the development of soybean products for use in human foods and the use of dried brewers' yeast in bakery products as a means of making them more nutritious, and of salvaging important nutrients otherwise largely wasted.

Another activity which combines both teaching and research aspects deals with the relation of diet to health and disease. In this study, students have been selected at the University Clinic for special dietary treatment. A nutrition counseling service is maintained in connection with the Medical Clinic. A special diet table is conducted for cases which cannot be handled

Experiment: Frozen food lockers used for experimental studies at the School of Nutrition, Cornell University.

satisfactorily through the usual campus food services. Nutrition services involving both data, food consumption, and clinical elements of nutrition status are being conducted with selected groups. These various activities are described in the attached reprint entitled, *The Role of the Dietitian.*

In the field of teaching, the school has set up special courses of

study to train men and women to meet the modern needs of the field of nutrition, in public health, in industry, in edueation, and in research. All of these courses of study are designed to give the students an appreeiation of the diverse aspects of the field and the interrelations, as well as speeialized training to fit them for their specific fields of service.

In addition to training speeialists in human and animal nutrition, the school offers work in food technology and food economies, including all the aspeets coneerned with food and its distribution. It provides instruction not only for nutrition specialists, but also for students preparing to work in related fields where some understanding of nutrition is essential. Instruetion is thus offered for those preparing to enter the food and feed industries and also for professional workers in sueh fields as public health and welfare, institutional management and agrieultural extension work. A reeently established course in *Food Economics* deals with the economic aspeets of the food problem, ineluding: history of the world's food problem; differenees around the world in food consumption, produetion, and trade; the forms and importanee of "food wastage"; the faetors that limit food production, possibilities of expanded production of food from land and water; ineome and its effeets on food consumption; reasons for differenees in the expensiveness of various foods; the cost and purposes of marketing services; the population problem as related to food.

All of these various activities are made possible through the combined efforts of the various colleges in the University, which are eooperating in the integrated program of the school.

In the field of research, the school will continue to deal partieularly with problems whieh require the integrated attaek by speeialists in the diverse fields of scienee and technology represented on its staff. It will also provide the opportunity for the solution, on a eo-operative basis, of specific problems of the food and feed industries.

It is a primary objeetive of the school to antieipate the ehanges and developments in the field of nutrition toward which research should be directed and for which future leaders should be trained through a realistieally oriented curriculum. On this basis, the present plans for the sehool call for further developments along the following lines:

1. **Food Technology**—This field includes the engineering, biochemical, and microbiological aspeets of food produetion, proeessing, and preservation, both in industry and in the home. It is a field which has been greatly stimulated by wartime developments and for whieh both trained men and women, and more knowledge gained through research, will be inereasingly needed.

2. **Food Economics**—The war emergency has demonstrated the need for a better integration of the knowledge and practices of food produetion and marketing with the prin-

ciples which govern nutritional requirements. A consideration of the problems here involved is of particular importance in relation to plans growing out of the proposals of the United Nations Food Conference.

3. **Medical Aspects of Nutrition**—The research in this borderline field, with particular reference to the detection of subclinical nutritional deficiencies and to the establishment of the dietary requirements for their prevention, required expansion. The present nutrition teaching program of the school needs strengthening by the inclusion of subject matter which only a person trained in medicine is qualified to handle.

All of these activities must rely upon the underlying physical, biological, and social sciences for support, and may call for some expansion of their services also.

Grants to The School

Grants received by The School of Nutrition during the fiscal year 1943–44 (which is the latest available report) were:

Nutrition Foundation, Inc., $3,500 to continue studies initiated during the previous year (when there was a similar grant of $3,500), on the nutrients of cow's milk.

Nutrition Foundation, Inc., $1,850 to extend current studies ($3,500 granted in the previous year by the Foundation) on factors influencing the nutritive value of dehydrated vegetables.

Consolidated Edison Company of New York, Inc., $30,000 to continue ($59,500 granted the previous year) the program of studies on the processing and distribution of protective food for improvement and health. (A group of 14 is carrying on research under this grant.)

Pan-American Airways System, $10,000 for studies on the use and transportation of frozen foods in the aviation industry.

Swift & Company, $2,100 to continue (funds also provided during previous year by Swift & Company) studies on the determination of the vitamin content of foodstuffs and of the effect of manufacturing process and cooking upon riboflavin content.

Faculty-Trustee Research Committee, $1,600 to study the functions of certain new factors required in bone formation.

The Faculty

The School of Nutrition, of which Dr. Maynard is Director, consisted, according to the 1944–45 report, also of an instruction and research staff of 48 members. These staff members were specialists, respectively, in nutrition, physiology, biophysics, agronomy, economics, medicine, chemistry, biochemistry, mechanical engineering, food and nutrition, pathology, institution management, food, animal husbandry, food chemistry, chemical engineering, bacteriology, and dietetics.

War activities claimed the attention of a number of the faculty

members, including Dr. Maynard, who served on two missions in England. Dr. Leo C. Norris has served as advisor to the Feed Industries Council. Dr. C. M. McCay (a contributor to the 1944 report of the Joint Legislative Committee of Nutrition) is an officer in the Navy, in charge of its nutrition research program. Several members of the faculty have been assisting in the program of the New York State Emergency Food Commission, on which Dr. Maynard is Commissioner in charge of nutrition. Other members have served on National Research Council committees dealing with war food problems. Still others who have contributed to the war program include the late Dr. E. S. Savage, Dr. Frank B. Morrison, Dr. Gustave F. Heuser, Dr. Sidney A. Asdell, Dr. Paul E. Sharp and Dr. G. F. Somers. Two O. S. R. D. projects dealing with nutrition problems of the armed forces have been carried out under direction of members of the faculty.

Students, and Admission

During the year 1943–44 27 graduate students majored in nutrition and five in food preparation. Of these, 16 were registered for the M.S. degree and 16 for the Ph.D. degree. Owing to the war the number of undergraduates preparing in nutrition has greatly decreased.

To be admitted to The School of Nutrition, students already registered in Cornell University must have completed three years of course work, including English, physics, chemistry, and biology; and, depending to some extent on the special interests of the student, in mathematics, foreign language, economics, and social science. Students not registered at Cornell University must meet the requirements of those registered, and the additional requirements: 1. The general requirements for admission to the University. 2. The full requirements for admission to the fourth year of work in the College of Agriculture, College of Arts and Sciences, or College of Home Economics.

The School of Nutrition has no building of its own at present. A gift of $200,000, from the Co-operative Grange League Federation Exchange, has been made to Cornell University for erection of a building for the school, and as soon as priorities will permit, construction will be started.

Nutrition Activities of the New York State Emergency Food Commission

(From the 1944 Annual Report of the New York State War Council)

The Emergency Food Commission was created by Governor Dewey upon approval of legislative leaders and the New York State War Council in March, 1943, for the purpose of correlating the activities of all agencies in the State working on the production, processing and distribution of food and on nutrition, in an effort to protect the food supply of the State's 13,000,000 people and to aid in the battle for food in the United States.

Human Nutrition

Protecting the health of the 13,000,000 people in New York State through the wise use of food has been the assignment undertaken by the Human Nutrition Division of the Food Commission. To carry out this huge task, many people and many groups joined forces. This resulted in a large interlocking organization composed of the resident staff of the Colleges of Agriculture and Home Economics, the School of Nutrition, the State Experiment Station at Geneva, the State Extension staff, the staff of 54 emergency agents, the 77 county and city nutrition committees and the Metropolitan Nutrition Division, in addition to other local organizations working on health and nutrition, such as the Red Cross and welfare and public health agencies. Without the contribution of any of these groups, the great accomplishments of this year would not have been possible.

In order to prepare adequately for conditions that might exist as a result of war, the Commission sponsored an active program for the development of new and improved food products which would aid in the nutritional requirements of the people of the State.

1. Test Kitchen. One of the effective ways of helping women with their food problems is to show them how to use available foods to best advantage through actual recipes and practical suggestions. A test kitchen was staffed by the Food Commission with a full-time home economist, testing recipes and developing new ways of adjusting to food shortages and to greater use of the abundant foods.
2. Soybeans. An amazing example of large-scale education is the work done during the year on soybeans. Although the increased use of soybeans and soy products has been one of the national nutrition goals, few states have made as much progress as New York during the last year. At the beginning, soybeans and soy products were practically unknown. Now it is possible to purchase them

in nearly every community and many people have obtained recipes on how to use them, have cooked them and have actually eaten them. While it is true that few people have materially changed their food habits to include soybeans or soy products as a daily food, thousands of people have begun an acquaintance.

Members of the soybean committee have been active in research on many phases of this versatile food. New uses and new recipes have been developed for the beans, flour and grits. Methods of sprouting for both home and large-quantity production have been worked out and studies made of the food values of sprouted beans during freezing and cooking. Studies of soy flour show that when a small amount (5 per cent) is used with wheat flour in making bread, the growth-promoting value of the bread is considerably improved. The results of all of this research have been summarized, along with current information about soy foods, and are to be published in a bulletin by the Extension Service of the New York State College of Agriculture.

3. Spreads for Bread. It has been the aim of the Commission to develop spreads high in nutritive value and vitamin content, and so palatable that they may appear daily on the table and thus help in easing the short supplies of butter. New spread combinations containing abundant New York products that can be manufactured commercially have also been developed. A leaflet and booklet were prepared on the use of spreads and have been distributed to the extent of nearly 100,000 copies.
4. Bread. Since bread is the basis of most people's breakfast and the lunch that is carried by children and workers, and is one of the chief sources of calories in the average diet, the Food Commission appointed a committee to work on improving this important food. The work of the committee was to develop formulas for breads high in nutritive value and to encourage bakers to produce "open recipe" breads where the quantity of ingredients is included on the bread labels, instead of the usual indefinite listings. A leaflet on bread was prepared and 23,000 copies distributed.
5. Brewer's Yeast. Studies have been continued in the cafeteria of the College of Home Economics on the use of brewer's yeast in bake products and entree dishes, because this is an excellent source of protein and one of the richest foods in the B-vitamins.
6. Meat Products. The extending of meat with cereal and soy flour and soy grits has been studied. During the lat-

ter part of the year, a leaflet was prepared on cooking utility beef and the tougher cuts of better grades of meat.

Up-State Area

One of the big contributions of the Food Commission has been the mobilization and training of nutrition workers to help solve special wartime problems and to develop a permanent program for improved health through good use of food. The Commission placed emergency agents in 10 counties where adult Home Economics extension work was not organized and in 17 urban areas. To work with these emergency agents and the regularly employed home demonstration agents about 3,000 volunteers were mobilized to serve on 77 county and city nutrition committees. These committees and agents were responsible for local nutrition activities of the Commission.

Food Preservation

There is every indication that about the same amount of food was preserved this year as during 1943, but it was done with better planning. Attendance at demonstrations was not as high as last year but Food Information Centers and consultant services which had been started in a small way in 1943 were well patronized. At information centers, each individual could discuss her own problem and in most cases have the answers in a few minutes. Some of these Information Centers traveled. Trucks and trailers were fitted up and made the rounds of communities and counties, taking the specialists and leaflets into the neighborhoods so as to be more easily available to homemakers who could not go far from their homes.

All phases of food preservation were discussed in these clinics. Highlighting the program were questions on jars and ways of sealing them, treatment of jar rubbers, use and care of pressure cookers and pasteurization of fruit and tomato juices. Recent developments in the field of frozen foods have resulted in an increased demand on the part of housewives for information on the proper preparation of fruits and vegetables for freezing. Preparing and presenting this information have been an important part of the food preservation program. Exhibits and posters played a more important part in the program this year. Radio stations co-operated in giving announcements. Eleven leaflets on preservation of food were prepared by the Commission with a circulation of nearly 500,000 and were of great assistance in effectively carrying out the program.

The Commission studies some of the problems experienced by homemakers in the home preservation of food. Last year there were complaints relative to the unsatisfactory results obtained by the preservation of foods in pressure cookers. A careful study was made of these problems, and meetings and demonstrations were held to assist homemakers in overcoming their difficulties. Pressure gauge testers were made by the Commission and sent to county fairs where thou-

sands of pressure cooker gauges were tested. Due to activities of the Commission thousands of homemakers have learned to operate their pressure cookers more efficiently, untold amounts of canned foods have been saved from spoilage and many accidents have been prevented.

During the 1943 season the Commission received reports of canned foods lost because of the disagreeable flavor imparted to the food from wartime rubber rings. Specialists in rubber chemistry cooperated in determining that such off flavors can be prevented by proper treatment of the rings before canning. Studies on the brining and salting of vegetables were made and methods for canning the utility grade of beef were developed. Directions for making fruit and vegetable relishes were worked out and studies of canning matured soybeans were made.

Improved Group Feeding

To help with the problem of feeding industrial workers in plants, the Food Commission offered the assistance of a dietitian and industrial nutritionists and of the emergency agents. Plants having inadequate eating facilities and poor management were referred to the Commission workers who called upon the plant management. Menu planning, rationing, food costing, equipment selection and employee training were among the problems. In all, over 60 plants received service from the Commission and repeated visits were made to these plants.

In addition to helping management find a way of feeding their workers within the plant, the education of workers toward securing a better diet was also attempted through the use of posters and exhibits placed in strategic places in the factory, and through the use of leaflets for the workers to take home.

Farm Labor Camp Feeding

During the Summer and Fall of 1944 about 50 labor camps were operated in the State by the Extension Service for over 6,000 temporary workers. The specialists in group feeding, with three assistants, gave full time during the six Summer months to assisting with the feeding operations in these camps. Most of the camps were visited in order to plan kitchen layouts, the selection of kitchen and serving equipment, assisting in the selection and training of kitchen workers, and advising the food management on planning foods that would be within their budgets and rationing restrictions. Problems in these camps were to have enough food that was acceptable to the food habits of the different people living in the camps and to have this food prepared and served under sanitary conditions. In general, it was felt that the food service in these camps was greatly improved through the assistance of the Food Commission and that through the experience of the last two years, even greater improvements may be made next year.

Nutrition Education

The Commission maintains a workroom where exhibit materials are continually being prepared. About 1,000 special exhibits were arranged during the year and fair exhibits were supplied to 33 county fairs. Posters on various food topics were prepared for use by the nutritionists and county and city committees. About 40 different leaflets were published by the Commission on many phases of wartime food selections and adjustments. Twenty-six copies of the motion picture on home canning were shown 430 times to nearly 21,000 persons. This film has been so well received that the British Government has requested the loan of a copy for use in England. Newspapers have used much of the Commission's nutrition material. Weekly columns prepared by Emergency Agents and Nutrition Committees have appeared in many papers. In preparing these columns they utilized the Food Information Service, a co-operative project with the Colleges of Agriculture and Home Economics to report the food markets each week. Retail merchants report that the buying habits of hundreds of

—Courtesy, OFFICIAL BULLETIN, New York State War Council—Henry B. Kraft, Editor

Demonstration does it. Miss Ruth A. Spielman, New York State Emergency Food Commission nutritionist, shows Fourth Avenue Mothers' Club, Bayshore, L. I., how to prepare a healthful vegetable salad, using a school lunchroom for a meeting place. Similar demonstrations are given weekly in various parts of New York State.

housewives are guided by these articles. The Emergency Agents made over 1,000 home visits during the year and arranged over 3,000 demonstrations and meetings with a total attendance of about 50,000 people. In addition, they used many other methods to reach a far greater unseen population.

Metropolitan Area

The second year of the Emergency Food Commission's work in the metropolitan area showed a trend in development, which indicated a desire on the part of the public for further guidance in food and nutrition. There seems to be a growing awareness of need to learn about food—its availability, use, care and value. Many of the groups are now asking for repeat demonstrations or a series of lessons so that they may have help on the most troublesome or most important aspects of the food picture.

The program in Harlem, centering around church groups, has resulted in a steadily growing and broadening demand for food demonstrations, exhibits and nutrition talks. Church organizations, Parent Teacher Associations, mothers' clubs, public health and hospital clinics, settlement houses, the household training educational project and the Y.W.C.A. groups are among the groups now being served by the Food Commission staff.

Through the Manhattan office a plan was worked out early in the year, with 23 radio stations, for releasing announcements of the new Food Commission leaflets and projects. Good cooperation has continued throughout the year with every offering of a new leaflet requests come in by the hundreds or thousands, reaching a total of 3,000 in the instance of the "Daily Food Guide" (observing the Jewish dietary laws). In Queens the nutritionists had a weekly radio program for nine months, on which they discussed current food situations and suggested adjustments for good nutrition. A total of over 235,000 leaflets prepared by the Nutrition Division were distributed.

Newspapers have given excellent cooperation in furthering the program by publishing nutrition articles which frequently reached a daily circulation of nearly 5,000,000 in New York county and 2,000,000 weekly in other metropolitan counties. Many persons were assisted in this way who otherwise could not have been reached.

A special Manhattan project was the Wartime School for Housewives held in April and May. This program which offered useful information on care, use and conservation of wartime food was given excellent press support. The registration for the four regular courses and the round table was 850, and 250 were turned away for lack of space. So many inquiries were made regarding another school or other sessions that a radio version was presented twice weekly for four weeks which stressed plentiful Summer foods. As interest still ran high, an extra session on cooking utility beef was given to a capacity crowd in August.

Other special projects promoted were the Soybean Fair at Hotel

Wellington, New York City; the Victory Food Forum at Gertz Department Store, Jamaica; the Farmingdale Institute, Nassau County; and the *Herald-Tribune* Exhibit, New York City.

In the Bronx and Brooklyn, in cooperation with the Civilian Defense Volunteer Office, Best-Buy-of-the-Week projects have been maintained since March. Recipes for the featured, currently plentiful foods were distributed upon request.

All offices cooperated with the Victory Garden Committees and with Canning Committees. Nutritionists were asked to train leaders or supervisors for community canning centers. Home Bureau, Civilian Defense Volunteer Office and American Women's Voluntary Service, public health centers, settlement houses, school and church groups looked to the Commission for canning demonstrations whenever their groups requested help. The canning film and slides were in constant use throughout the Summer. In Westchester County the nutritionist in cooperation with Westchester Lighting Company held clinics over the county for pressure gauge testing and answering canning questions. Demonstrations on food preservation given in cooperation with Red Cross and Civilian Defense Volunteer Office at Coney Island on the Boardwalk during August and September were well attended, reaching a total of 3,500 persons. Canning exhibits were widely used to arouse interest and give guidance in canning procedures.

Libraries in all boroughs have requested exhibits, literature, and demonstrations. In Queens all 50 libraries have established contact with the Commission and many have had and are continuing a series of demonstrations on important food problems. The libraries in all areas followed this trend and the demonstrations reached a much interested group of housewives.

During the year 100,000 persons have received assistance at demonstrations or other meetings and over 290,000 have been reached through literature and personal contact. The work with industrial plants has continued to grow both in number of plants requesting help and in new practices they have adopted. The industrial nutritionist has assisted 25 plants in furnishing better food to workers. In several plants an educational program was requested and carried out to interested workers in better food selection and lunch packing which reached about 27,000 individuals. Some work was also done in connection with school lunches.

Animal Nutrition

One of the objectives of the Emergency Food Commission has been to help farmers of the State maintain their feeding operations and produce adequate supplies of milk and eggs for consumers. This has been accomplished in cooperation with the feed industry and various Federal agencies notwithstanding serious shortages of feed supplies and serious obstacles to the movement of feed, such as price ceilings and transportation difficulties. An advisory committee made

up of representatives of the feed industry and the College of Agriculture has met regularly throughout the year to study the feed problems of the State's dairy and poultry farmers.

At the beginning of the year, farmers were faced with a particularly grave feed supply situation. Livestock numbers during the last quarter of 1943 were at a record high level, which resulted in the use of a disproportionate share of the 1943 domestic feed supply. As a consequence the stocks of feed grains on farms on January 1, 1944, were approximately 13 per cent smaller than at the same time the previous year. Farmers were encouraged therefore to maintain inadequate inventories of feed at all times so as to prevent any interruption in their feeding operations.

The Commission continuously urged upon the War Food Administration the necessity of large imports of grain from foreign countries with the result that a large volume of wheat, oats and barley and some rye was imported from Canada and a small tonnage of corn from the Argentine. These imports of grains were helpful in meeting the demands for food. Corn continued scarce but substitutions were made in feed formulas. These substitutions resulted in higher prices which farmers had to pay for feed because substitute grains were more costly than corn.

The Commission maintained vigilance during the year for the possible development of shortages of special feed ingredients. Except for the shortage of high protein feeds early in 1944, no shortages of these ingredients developed. The serious shortage of vitamin and yeast supplies needed in the manufacture of poultry mash mixtures which occurred in 1943 was relieved in the course of the year through the increased production of low potency vitamin A fish oils and by a more normal production of dehydrated alfalfa meal. The shortage of riboflavin carriers which also occurred during 1943 was relieved over the year by the increased production of dried whey and by-products of the fermenting and distilling industry. Large quantities of synthetic riboflavin were also made available to feed manufacturers. The shortage of steamed bone meal was relieved through the production of greatly increased quantities of defluorinated rock phosphate.

". . . to make the science of nutrition effective in the lives of the present generation."

The Nutrition Foundation

By Ole Salthe

Executive Secretary, The Nutrition Foundation, Inc.

THE NUTRITION FOUNDATION was organized by food and related manufacturers in December, 1941, and began to function as a public service institution in March, 1942.

The basic purposes of the Foundation are:

(1) The development of a comprehensive program of fundamental research providing basic information in the science of nutrition, and

(2) The development of an educational program to make the science of nutrition effective in the lives of the present generation by facilitating the widest possible usage of what is known in the science of nutrition.

The entire program is one of public service, and distinguished representatives of the public serve as members of the Board of Trustees, the governing body of the Foundation. The public trustees include: Dr. Karl T. Compton, Chairman of the Board, President of the Massachusetts Institute of Technology; Cason J. Callaway, Vice-Chairman of Board, Hamilton, Georgia; the Rev. Hugh O'Donnell, Vice-Chairman of Board, President of Notre Dame University; Dr. F. G. Boudreau, Director, Milbank Memorial Fund; Dr. O. C. Carmichael, Chancellor, Vanderbilt University; Dr. W. C. Coffey, President, University of Minnesota; Charles Wesley Dunn, member of New York bar; Dr. Thomas Parran, Surgeon General, U. S. Public Health Service; Dr. Ray Lyman Wilbur, Chancellor, Stanford University; M. L. Wilson, Chief, Nutrition and Food Conservation Branch, Food Distribution Administration; and Dr. Stephen S. Wise, Rabbi, Free Synagogue.

The funds of the Foundation are obtained through voluntary contributions from founder and sustaining members. The founder members contribute $10,000 annually. The contributions of sustaining members are based upon their capitalization and range from $500 to $5,000 annually. All contributions are made on a five-year basis so that the Foundation may be assured of support for at least five years in advance in planning its research program. There are now 50 food and related manufacturers contributing to the Foundation, 22 founder members, 21 sustaining members, and seven donors. The contributions to date total $1,524,500. Each member is represented on the Board of Trustees and on the Food Industries Advisory Committee.

This latter committee is an important factor in the development of the Foundation. Its membership is made up of the research directors, chief chemists, and technical

The Nutrition Foundation

INCORPORATED

Chrysler Building, New York, N. Y.

THE NUTRITION FOUNDATION, INC.

The Nutrition Foundation was organized and financed by food and related manufacturers to develop and support a comprehensive research and educational program in the science of nutrition.

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A part of the program has been planned to deal with nutrition in its immediate relation to the war emergency and to public health.

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Another part of the program will be concerned with long time studies of a more fundamental nature . . . the kind of exploratory research that will lay the foundation for better health and scientific guidance in the food industry of tomorrow.

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Grants-in-aid will be made available to established research institutions upon recommendation of the Scientific Advisory Committee and the Board of Trustees.

The science of nutrition is the science of food and its relation to life and health

THE NUTRITION FOUNDATION, INC.

The Nutrition Foundation is governed by the Board of Trustees, which includes representatives of founder and sustaining members, and representatives of the public.

ADVISORY COMMITTEES

The Scientific Advisory Committee

An independent group of outstanding scientists in the field of nutrition.

The Food Industries Advisory Committee

Includes research and technical directors of food and related manufacturers.

OFFICERS

Karl T. Compton
Chairman of the Board of Trustees
George A. Sloan
President
C. G. King
Scientific Director
Ole Saithe
Executive Secretary

The following research projects were approved at the first meeting of the Board in 1942;

They all contribute to the frontiers of the science of nutrition and, in the long run, to better public health;

To illustrate the varied nature of the projects they are divided into three groups:

PROJECTS HAVING A DIRECT RELATIONSHIP TO THE WAR EMERGENCY

(1) Nutrition and resistance to fatigue in normal man.

(2) Effects of environment on nutrition and metabolism.

(3) Effects of environment on nutritional requirements and cell respiration.

(4) A natural butter suitable for use under tropical conditions.

(5) Utilization of the proteins and minerals of the soy bean.

(6) Availability of essential unsaturated fatty acids in hydrogenated fats.

(7) Thiamin content of frozen vegetables.

(8) Carotene and ascorbic acid content of vegetables preserved by drying.

(9) Effect of large quantity cooking on the vitamin and mineral content of vegetables.

PROJECTS HAVING A DIRECT RELATIONSHIP TO PUBLIC HEALTH

(1) Methods for the detection of clinical vitamin deficiencies.

(2) Quantitative relations of Vitamin A intake to bodily stores and well-being at different ages.

(3) Relation of nutrition to dental caries in the monkey.

(4) The carotene and vitamin A content of market butters.

(5) Conservation of vitamins and other nutritive values in dehydrated vegetables.

(6) The amino acid requirements of man.

(7) Survey of the ascorbic acid content of Ontario-grown fruits and vegetables.

(8) Nutritional deficiencies in the Atlantic region.

(9) Relation of nutrition to cellular metabolism, with special reference to rheumatic fever and chemotherapy.

(10) Factors which may alter calcium utilization by the adult man.

(11) Influence of dietary factors on the healing of bone fractures.

PROJECTS THAT PRIMARILY ADVANCE THE FRONTIERS OF THE SCIENCE OF NUTRITION

(1) Development of bioassays for vitamins and amino acids.

(2) Thiamin analysis and stability in cereal products.

(3) Nature and content of provitamin A pigments and content of ascorbic acid in tomatoes.

(4) Studies of the vitamin B complex with the mouse as an experimental animal.

(5) Biotin (Vitamin H) metabolism in man.

(6) Protein and vitamin interrelationships.

(7) The nutritional significance of biologically available methyl groups for man and various animal species.

(8) Vitamin content of important plant foods.

(9) Synthesis and metabolism of nicotinic acid in the rat.

(10) Fluoride and phosphate metabolism of bones and teeth.

(11) Metabolic fate of choline.

(12) The amino acid content of vegetables.

(13) Quantitative study of nutrients of mother's milk under specific or known dietary conditions at different states of lactation.

(14) Copper-containing proteins and their relation to the destruction of specific nutrients.

(15) To support the work of the Food and Nutrition Board of The National Research Council in developing and applying the science of nutrition.

(16) Publication of authoritative reviews.

An important aspect of nearly all of the projects is the provision made for better training of young research men, under the most competent leadership in American Educational Institutions.

advisors of the member companies. These members serve as an advisory group and as a means of maintaining a close relationship between the Foundation's progress and the technical staffs of the member firms.

The development of the research program is in the hands of the Scientific Director, Dr. Charles Glen King, and the Scientific Advisory Committee, composed of 15 outstanding research men, most of whom are in university positions.

The Foundation functions chiefly through grants in aid in support of research at university centers where there are strong graduate schools in the basic sciences, or to medical centers where there are opportunities for outstanding research.

The Board of Trustees has appropriated to date $659,090 for 94 grants to 42 institutions in the United States and Canada.

Any person in the field of science may apply for a grant in aid. All applications must be made in writing, and the applicant must outline the exact nature of the project, its general significance, the plan of procedure, the budget plan, and the time schedule. All applications are referred to the Scientific Advisory Committee for balloting. Each application is then considered by the full committee, which meets twice each year. No recommendations are made to the Board of Trustees without a favorable report from the Scientific Advisory Committee. The program is thus kept independent and there is a forthright commitment to make the funds as useful as possible in the development of a long range program of fundamental research and education in the public interest.

Where a grant is made, the only condition placed upon the grantee is that he submit a report every six months of the progress being made, and in the event that a research paper is published, that he arrange to send 100 reprints of his paper to the Foundation. The publication of research findings based upon grants from the Foundation is left to the judgment of the grantee.

War Nutrition First

During the war emergency, nutritional studies related directly to the war have had first consideration in the Foundation's program. In making grants with military aspects as a primary consideration, close collaboration had been maintained with the office of the Quartermaster General, and the Office of the Surgeon General.

The Foundation had appropriated $151,040 for 28 studies in this area. These studies include, among others: The salt problem, life raft rations, nutrition and resistance to fatigue, effects of environment on nutritional requirements, nutrition in relation to aviation, the relation of nutritive status to bone healing, protein metabolism during starvation, relation of nutritive status to tolerance of arsenical drugs used by the armed forces, losses in nutritive value during processing and large scale cooking in accordance with recommendations of the armed forces, and nutritive losses in representative dehydrated foods in accordance with plans approved

by the Office of the Quartermaster General.

The results of most of these studies cannot be disclosed until after the war.

Colonel George F. Doriot, Chief of the Military Planning Division, Office of the Quartermaster General, in referring to some of these studies in a public statement on November 30, 1944, said: "In this country, Dr. Charles Glen King, Scientific Director of the Nutrition Foundation, has been conducting interesting and important experiments on human subjects which have demonstrated the types of food which will best sustain flyers at high altitudes.

"He has found that pre-flight and in-flight diets high in carbohydrates and low in fat and protein enable men to withstand the strains of high altitude flight much better than other types of diets."

He further stated:

"The application of his findings has resulted in a measurable decrease in the number of those flying accidents which up to a year ago had to be attributed to 'causes unknown'."

In addition to studies related to the war, the program of the Foundation is being developed along five different but related areas of sudy:

First—to find the basic human requirements of specific nutrients such as proteins, vitamins, minerals, etc.

Second—to learn the origins and functions of individual nutrients in living cells.

Third—to give special consideration to the nutritional requirements during pregnancy; lactation and infancy.

Fourth—to unravel some of the relations between food intake and health.

Fifth—to assist in educational and applied aspects of the problem of getting people to eat the food that will give buoyant health.

The Board of Trustees has appropriated $508,050 for 68 projects in these five areas. Time will permit of referring to only a few of the projects in each area:

In the area relating to the basic human requirements of specific nutrients, the Foundation is supporting projects concerning the protein and amino acid requirements. By placing funds at the disposal of Dr. W. C. Rose at the University of Illinois, we have been privileged to help in getting a clear picture for the first time of the human requirements of the amino acids.

Dr. King recently stated it was no exaggeration to say that reference to Dr. Rose's work will probably be found in practically every scientific book on nutrition, physiology, and biochemistry, written within the next several hundred years. Medical, military, and industrial applications based upon Dr. Rose's studies are already under way.

Other Studies Supported

In this area, the Foundation is supporting a study of the vitamin requirements, at the University of Wisconsin. A group of carefully selected prison inmates serving on

a voluntary basis are used as research subjects. The first publication arising from this study has given strong support for the Vitamin C level recommended by the National Research Council. Further studies in this area, concerning the mineral requirements, especially calcium and iron, are also being supported by the Foundation.

In the area relating to the origins and functions of individual nutrients in living cells, the Foundation is supporting the following studies: A long time study of the steps involved in the biological conversion of sugars to fats; basic studies of carbohydrates metabolism; studies of the role of amino acids in albino rats to analogous reaction in the human body, with special reference to liver and kidney functions; studies clarifying reactions of the amino acids in plant cells and devising new methods for their measurement; studies to identify the newer vitamins in the B complex; study of the role of niacin, the anti-pellagra vitamin, and of devising new methods of measuring both the vitamin and its derived products; and studies of the variety differences, and the genetic development of vegetables and fruits having superior nutritive quality.

In the area relating to maternal and infant nutrition, the Foundation is supporting projects relating to the composition of mother's milk. Quantitative studies of the nutrients consumed by the mothers and available to the infants during successive stages of lactation, will extend well beyond the information that has been available in the past.

The Foundation is also supporting a parallel study of the composition of cow's milk at Cornell University.

The studies include one in which very interesting leads regarding the effects of the mother's diet upon malformations in offspring have been discovered, and another on the relation of nutrition to capacity for good lactation.

A project is also under way in which a colony of standardized monkeys is being used to study maternal and infant nutrition over a long period. In this experimental colony, it will be possible to induce definite and controlled degrees of deficiency and to avoid most of the uncontrolled degrees of deficiency and to avoid most of the uncontrolled variables that necessarily creep into human studies.

According to the best evidence available, better food consumption by mothers before infants are born would mean within a single decade in the United States alone, several millions of infants in more robust health.

Food Intake and Health

In the area concerning the relations between food intake and health, the Foundation is supporting the following projects: the relation of nutrition to protection against tooth decay in experimental animals and studies directed toward the solution of the dental caries problem; the relation of nutrition to rheumatic fever (encouraging results have been obtained in preventing the recurrence of rheumatic fever in children by improving their diets); studies re-

lating to the development of more satisfactory methods of diagnosing deficiency diseases; studies on vitamin A intake in relation to bodily store and well being at different ages; and studies relating to the capacity of liver cells to destroy cancer stimulating compounds.

Support is being given to several projects concerning the relationship between current food practices and health.

Physicians, biochemists and nutritionists are co-operating in obtaining accurate records of individual food consumption, in parallel with accurate and detailed records of the health of the individual through long periods of time, starting with gestation and continuing through a number of years.

In the area relating to the development of its educational program, the Foundation publishes each month a critical, unbiased review of the world's literature in the science of nutrition. The publication of Nutrition Reviews was undertaken as an aid in bridging the gap between substantial research findings and their acceptance with confidence on the part of those who deal with the public.

The journal is made available to professionally trained people to enable them to keep abreast of current progress. It is now reaching every part of the world where mailing services are available.

Special editions are published in the Portugese language for Brazil, and in Spanish for the other Latin American countries. We have just been asked to consider the publication of a French edition.

A fellowship fund for post doctorate training of physicians and dietitians in nutrition has also been established by the Foundation.

Fundamental research of an exploratory character as a rule takes time. It can't be hurried. Some of the projects require continued support over a number of years. Preliminary reports on a number of the grants, in addition to those to which I have referred, have shown such promise that the Scientific Director and the Scientific Advisory Committee have recommended renewals for two and three years. Since July 1, 1942, when the grants were first made available, over 70 research papers have been published by grantees in the leading scientific journals of the country.

War Food Administration

Washington, D. C.

The Nutrition Programs Branch

Basic Responsibility

The Nutrition Programs Branch is responsible for developing a coordinated national wartime nutrition program. Its efforts are directed toward insuring the highest possible nutritional level of the American people as a factor in maintaining the national health under war conditions.

The Branch's work is largely educational in character. Its activities are concerned primarily with getting information to housewives on how they can best cooperate with the War Food Administration in making the most of the war food supply. It directs its attention to such fundamentally important matters as: How can the housewife do the best job of feeding her family properly on the foods available; how can she adapt the available foods to fit the established food habits of her family, that is, use of meat extenders for meat itself; how foods in temporary surplus can best be consumed by inclusion in the meals; how foods in short supply can be compensated for by other foods of equal food value; how relatively new foods of exceptionally high nutritional value such as soybeans, peanut butter, and enriched flour and bread can be utilized to strengthen the nutritional value of wartime meals.

Through its coordinated structure of existing agencies, the Branch carries out essentially the same functions for which a large educational agency staff was required during World War I.

Nutrition Activities

On the Federal level there are a number of agencies carrying on nutrition activities related to their special spheres of responsibility. The major agencies among these are the United States Public Health Service, the Extension Service, the Office of Education, the Children's Bureau, the Farm Security Administration, the American Red Cross, and the several administrative units of the War Food Administration and the Department of Agriculture. The Branch develops its programs in direct consultative relationship with an Interdepartmental Nutrition Coordinating Committee on which each of these agencies is represented.

At the State level, there are counterparts of the majority of the above-named Federal agencies. Representatives of these State agencies form the State nutrition committees, which have been in existence in each of the 48 states and have been carrying on active nutrition programs since 1940. All states have sponsored local nutrition committees through which the programs recommended by the Nutrition Programs Branch, as well as their own state programs, are carried out as an applied program in the local community. Membership of these local committees is

usually made up of the local home demonstration agent, the home economics teacher, the local health officer, the Farm Security Home Management Supervisor, representatives of other interested local agencies and groups such as the home economics demonstrators of the local utility companies, the Red Cross Nutritionists, and representatives of the Parent-teachers Association. It is estimated that there are from 2,500 to 3,000 local committees, all of which take their general direction from the State Nutrition Committee.

The agencies and individuals brought into an organized force by the Branch programs represent the full resource of the country in technical knowledge and lay interest in nutrition and supply a facility which could not be met by any other means. The Branch program is therefore directed toward securing the full contribution of all these cooperating groups in furthering the War Food Program. Its organization accordingly is small and is designed to function most effectively toward this end.

The State and Local Nutrition Activities Section handles the program development work with the state committees (one in each state and the District of Columbia). Regional conferences are held periodically with the state chairman, and a staff of field representatives (one for each of the five Office of Distribution regional areas) maintain constant field contact with the chairmen, personally interpreting new phases of the program, assisting in connection with the problems of the established aspects of the program, advising and consulting with the secretaries who have been assigned to the committees to work within the individual state. Each field consultant assigned to a regional area maintains cooperative relationships with the regional Office of Distribution. State and local nutrition committees carry the responsibility for interpreting and adjusting the national program to the local food situation.

There is a state nutrition committee in each state and the District of Columbia. To implement the nutrition program, an executive secretary is provided for each state nutrition committee to facilitate the work of these volunteer committees. The executive secretaries work under the immediate direction of state nutrition committees.

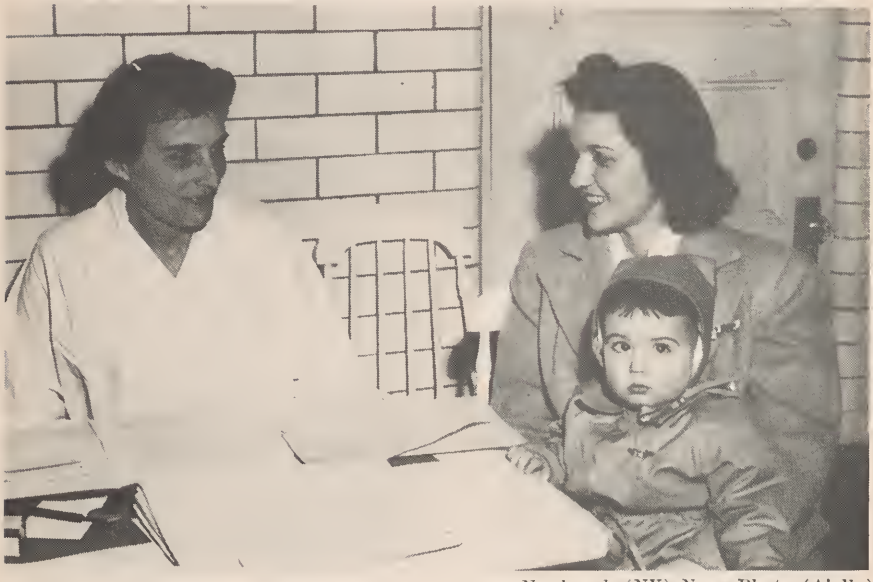
Special Services

Programs which do not specifically relate to the work of the committees or to the coordination procedures in operation with other Federal agencies are handled by the Special Services Division. Special programs have been developed in the interest of securing the aid and cooperation of certain groups independently of committee work. The food industries, for example, have contributed greatly to the program by featuring the food chart and in directing their advertising toward more balanced diets; special programs have been undertaken with physicians and public health officers, and direct relations are being established and maintained with national organizations having state and local affiliates.

". . . that our teeth may be immunized against decay."

Background of the Newburgh-Kingston Caries-Fluorine Demonstration

By Senator Thomas C. Desmond
Chairman, New York State Joint Legislative Committee on Nutrition



—Newburgh (NY) News Photo (Aiello)

The fluorine clinic in the Health Center in Newburgh is more than a dental examination. It includes a complete physical examination of 500 children, from infancy to eight years of age. Here the case history of a 13-months-old girl is being given by her mother to Mrs. Charles Hallas, volunteer State clinic assistant.

In the pleasant city of Newburgh, New York, 60 miles up the Hudson from New York City, 3,200 children are pioneering for us all in a demonstration which may cut in half the twin pains of toothache and dentist's bills.

In April, 1944, with hardly a word of protest from any quarter, the 30,000 people of Newburgh, through their city council, eagerly accepted an invitation from the New York State Department of Health to be one of the first communities in the world deliberately to fluorinate its water supply.[1]

[1] The Newburgh-Kingston demonstration is the first of its kind in the world, taken as a whole, including the elaborate preliminary physical examinations of the school children. At the date of writing, the fluorine is not yet being added to the water, but is expected to be any day. Since January, 1945, the water of Grand Rapids, Michigan, has contained added fluorine, in a project conducted by the United States Public Health Service in cooperation with the Michigan State Department of Health. But the Michigan project does not involve any such preliminary examinations of the children as the New York State Department of Health has completed in Newburgh and Kingston, nor is there to be any control city in Michigan such as Kingston will be in New York. The New York State Department of Health deserves the credit, therefore, for inaugurating the first thorough and substantial demonstration of the effect of adding fluorine to a city's water supply.

What lay behind this decision and what prospects are before it makes a story as romantic as any in the history of modern science.

Fluorine is a chemical element of the chlorine, iodine family. To all its drinking water Newburgh is going to add sodium fluoride, a salt that is known to prevent the development of tooth decay. How the effect of fluorine on teeth came to be known reveals in everyday terms the value of the patient and modest research which is carried on all the time in American laboratories and field studies, public and private, and justifies full and increasing support for such research by all public-spirited persons and agencies.

The story begins in 1908 when the Colorado Springs Dental Society set out to study the mottled enamel prevalent on teeth in that community. Mottled enamel: an unsightly discoloration of the teeth which had never been reported in American dental literature and was not known to exist anywhere else except in certain small, adjacent places in the Rocky Mountains. There was not the remotest suggestion as to what the cause might be.

The first fact discovered was that its occurrence was limited to natives of Colorado Springs, or those who had lived there during early infancy. Then it was found that some of the towns in that part of Colorado had a 100 per cent affliction of their children while towns close by were immune. The only point of difference between such towns was the water supply.

Was it a simple matter, then, to analyze the water of these towns and find the cause of the mottled enamel? Simple to try, in the regular and standard ways, but the results were—nothing! No conclusive or even suggestive evidence could be drawn from the analyses. It seemed to be a stalemate.

What relation does all this have to the prevention of tooth decay? An accidental one only, after one of those happy accidents that alert scholars are quick to turn toward the public advantage. That will be seen in a moment.

One of the towns where mottled enamel was common was Bauxite, Arkansas, an aluminum ore mining town wholly owned by the Aluminum Company of America. The result of the examination of Bauxite's water, made in 1928 by the United States Public Health Service, came to the attention of the company's office in Pittsburgh. Taking an interest in the problem, the company's laboratory examined the water. This analysis, more thorough than any previous one, found something new in the water: fluorine.

But fluorine was decidedly an unusual constituent of water. The report was rejected by the company, and a second analysis ordered. Again fluorine was found. This second report was rejected, and a third ordered. A man who had taken the lead in all these studies, Dr. Frederick S. McKay, tells what happened next in the following words: "These efforts and findings were set forth in a personal letter to me from Mr. Churchill, the chemist of the Aluminum Company, to the writer dated January 20, 1931. I have little hesitation in describing at

this time the deep sense of elation this letter brought to me, as instinctively I felt that the end of the long trail, running back 25 years, had been reached."[2] Samples of water from other places were analyzed for fluorine and the results were all that could have been hoped: fluorine was present in the water from each district affected with mottled teeth, and absent except for the merest trace from the waters of non-affected areas.

New Problem Posed

Meanwhile, Bauxite, Arkansas, had switched to another source for its water. After 10 years an examination found that the enamel defect had completely ceased! One problem had been solved. But in the process of solving it something all unforeseen was discovered, and a new cycle of research was entered upon. For, while studying the mottled teeth of those who had during childhood drunk highly fluorinated water, conclusive evidence was obtained that, unattractive as such teeth were, they were remarkably free of cavities, or dental caries.

The road is now clear from Colorado to Arkansas to New York. A series of studies have shown beyond doubt that while too much fluorine in the water will mottle the enamel of growing teeth, a small amount of it leaves no trace, and in a way which is not yet clearly understood, serves to protect such teeth from decay.

Studies of 21 cities were made by the United States Public Health Service in 1940, under the leadership of Dr. H. Trendley Dean. Striking differences were found in the rate of dental caries between one city and another, in none of which was mottled enamel a problem. Galesburg, Illinois, for example, had a dental illness rate of 236; Michigan City, Indiana, had a rate of 1,037—five times as many bad teeth! When all of these 21 cities were listed in order of their dental health it appeared that that was also the order of the fluorine content of their water supplies. And one part per million of fluorine was enough to make the difference between good and bad teeth.

These studies were being watched by the New York State Department of Health, headed by Dr. Edward S. Godfrey, Jr. Dr. David B. Ast of this department, now Chief of its Dental Bureau, had been studying the problem closely. In December, 1942, he first proposed at a staff meeting that the wonder of fluorine be demonstrated in some New York community. Commissioner Godfrey gave full approval and support. Two years later they were ready. In April, 1944, they wrote to the City Council of Newburgh. Would Newburgh like to become a Galesburg? Would it be willing to add to its water supply one part per million of sodium fluoride? Would it be the first city in the world to try to prevent dental caries on a mass scale?

"Yes," said the City Council, on the recommendation of Dr. C. W. Barth, city health officer. And

[2] Moulton, Forest Ray, ed. *Fluorine and Dental Health*, p. 3. American Association for the Advancement of Science, Washington, 1942.

on April 10, 1944, an editorial in the *Newburgh News* stated: "The Newburgh Dental Society follows the Medical Society of Newburgh in hailing the demonstration of the dental benefits from fluorine to be made here by the State Department of Health. . . .

"Newburgh is fortunate beyond measure in being selected for this demonstration. There is need to emphasize that this is not by any means an experiment. Scientific and medical men know beyond all question that fluorine is a preventive of dental decay and defects."

Newburgh has itself paid for and established a fine modern laboratory for the use of the State medical technicians, and had opened the facilities of its Health Center to the fluorine clinic. Parents, teachers, doctors, dentists, and the children themselves are all kept informed of the purposes and methods of the demonstration.

Dental health for all of us who drink water from municipal water supplies may, in 10 to 20 years, be as inexpensive as the simple process of fluorination. For the one-third of the population which gets its water from springs and wells there may be the promise of similar benefits as a result of external applications of fluorine on the teeth of growing children. (Fluorine, in either case, has no effect on adult teeth.) The United States Public Health Service is now conducting demonstrations of this process in Minnesota. In one project, conducted over a two-year period, there were found 40 per cent less decay among fluorine-treated teeth than among untreated teeth.

Medical research has made few recent discoveries more hopeful than this: that our teeth may be immunized against decay just as many of us are now immunized against certain other diseases which once were common but today are out of date. The New York State Department of Health deserves full support, financial and otherwise, for its pioneering work in this field.

". . . fluorine therapy through communal water supplies may protect teeth against dental decay."

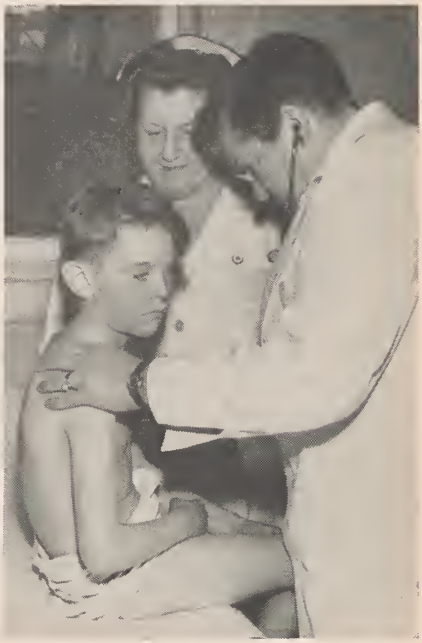
The Newburgh-Kingston Caries-Fluorine Demonstration

By David B. Ast, D.D.S., M.P.H.

Chief, Dental Bureau, New York State Department of Health

Tooth decay, its causes and its control, present a public health problem which is yet to be solved. While dentistry in the United States is regarded as the best in the world, it merits this high standing primarily because of the excellence of its restorative procedures, rather than in the field of prevention of dental disease. We do not yet have satisfactory means to prevent tooth decay, and the best that the dental profession can offer to prevent tooth mortality is for the patient to receive regular periodic attention by the dentist. It has been demonstrated that there is a wide disparity between yearly increments of dental defects and the number of corrections completed, and this disparity accounts for the accumulated dental problem with which we are faced today. While there is no unanimity of opinion among the many investigators as to the causes and methods of control of dental caries or decay, there are certain fundamental factors which we must recognize in order to work toward a reasonable solution of this problem.

1. Dental caries is practically universal, starting early in life and affecting all age groups regardless of race, sex or economic status.



—Newburgh (NY) News Photo (Aiello)

Another phase of the clinic is a thorough physical examination, in this instance made by Dr. Marion F. Loew, of the State Department of Health, while a volunteer nurse looks on.

2. That dental caries is a progressive disease and unless corrected through surgical intervention it will ultimately cause the loss of affected teeth.

3. That diseased teeth and their investing tissues may become foci of infection.

4. Because of the widespread prevalence of this disease and the inadequacy of present day methods to control it, dental disease is a public health problem and must be treated as such. This calls for its study along broad epidemiological lines and its control by the application of means which can reach large masses of the population.

The purpose of this public hearing is to discuss nutrition in its application to various phases of health. The relationship of nutrition to dental health must be considered from two angles.

1. As it relates to the health of the supporting tissues of the teeth.

2. As it relates to the onset and control of dental decay.

In regard to the first point, there is I think unanimity of opinion that a sound and adequate dietary is essential to the health of the bone and soft tissues supporting the teeth.

Nutrition, Dental Decay

However, the relationship of nutrition to dental decay is still a controversial question in the minds of many. By far, the weight of the evidence today seems to indicate that nutrition does play an important part during the years of tooth development, in helping to build sound teeth. But after the enamel has been calcified it is not likely that the enamel can be benefited by a fortified diet, nor does the enamel suffer because of an inadequate diet. A large mass of evidence does seem to support the hypothesis that excessive sugars and starches in the diet invite an increased growth of acid-producing microorganisms in the mouth and through fermentation an acid is produced which initiates the decalcification of the enamel.

It is not the purpose of this paper to discuss in detail the general subject of nutrition and dental health, but to discuss a particular element, fluorine, and its application in communal water supplies, to protect the teeth against the onset of dental caries.

Within recent years the effects of fluorine on tooth structure have been studied by many investigators. In certain areas in the United States where fluorine is present in the drinking water in concentrations in excess of 1.0 ppm (part per million) some of the teeth of those drinking the water throughout the years of tooth development (through age eight) has been found to be mottled. The prevalence and extent of the mottling is dependent on the concentration of the fluorine in the water. Further investigation of the dental picture in these areas where mottling was evident showed that there was a decidedly lower prevalence of dental defects in comparison with fluorine-free areas which were similar in other respects. In Galesburg and Monmouth, Ill., where the water contained 1.8 and 1.7 ppm of fluorine respectively, there was less than half the dental caries experience among the children examined than in Macomb and Quincy, Ill., two similar communities, whose water contained only 0.2 ppm of fluorine.

In 1941 Dr. H. Trendley Dean, of the U. S. Public Health Service, and his co-workers reported two studies. Bauxite, Ark., had a water supply which was obtained chiefly from deep wells where the flourine content was around 14 ppm. Twelve years previous to this study, the inhabitants were advised to, and did, change the source of their water supply to the nearby fluorine-free Saline River. Children who had ingested Bauxite fluorine-containing water while their teeth were developing all showed mottled enamel. In an examination of these children for caries experience, it was found that the prevalence of dental caries among Bauxite children showing mottled enamel, but using fluorine-free water for the past 12 years, was markedly less than among a comparable group of Benton pupils who had used Saline River, fluorine-free water throughout their lifetime. Children born within a few years of the change-over showed practically no mottling but had a low caries experience. Those children born latest after the change-over showed the highest caries index, although they had been exposed to the risk the shortest time.

The second study by Dr. Dean was to determine the lowest concentration at which fluorine was effective in reducing the incidence of dental caries and the extent to which this concentration was effective. Eight suburban cities around Chicago were selected. Four cities having 1.2 to 1.8 ppm fluorine in their drinking water revealed rates of 252 to 323 for total caries experience which includes decayed, missing and filled teeth. This experience did not equal the number of already filled teeth in the cities in which fluorine free water was used and in which the total caries experience rate was from 673–810. Dr. Dean concluded, "Considering the relative homogeneity of these urban populations and the sampling method followed, it is difficult from an epidemiological standpoint to ascribe these observed defects to any cause other than the common water supply. The dental caries inhibitory factors, presumably fluoride, operated at such low concentrations (e.g. 1.2 ppm of F) that mottled enamel as an esthetic problem was not encountered."

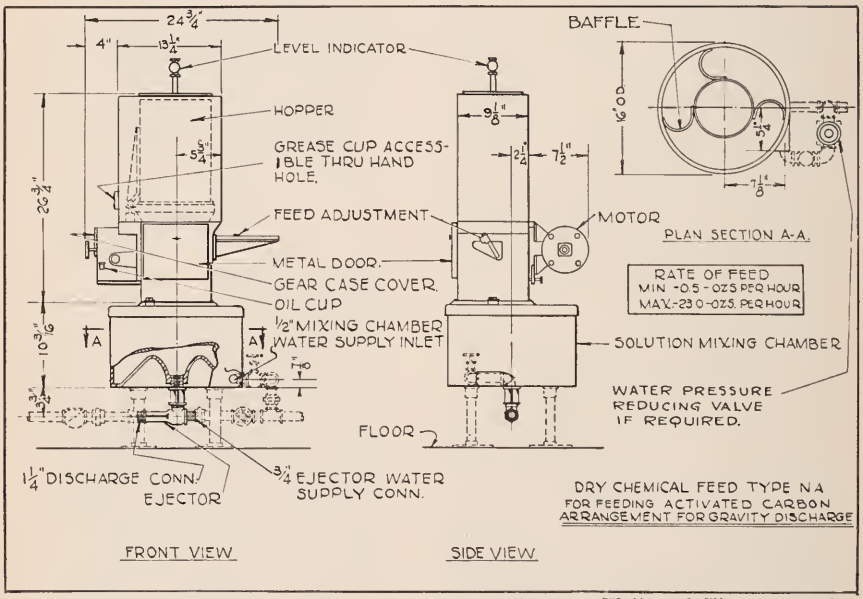
The Resultant Hypothesis

These investigations have led to the dental caries fluorine hypothesis which states that there is an inverse ratio of dental caries to fluorides ingested in drinking water when the fluorides are ingested during the years of tooth development. This hypothesis does of course take into account that beyond certain limits fluorides are toxic and that the first evidence of toxicity is mottled enamel. The optimum concentration of fluorine in drinking water which apparently will offer the desired protection without the mottling effect is about one part per million. The concentration of one part per million of fluorine in water has been specified as the maximum permissible concentration in drinking water by the United States Public Health Service.

For almost two years, the New York State Department of Health has been studying the results of these investigations and has given careful thought to the possibility of using this element, fluorine, in protecting the children of whole communities against the ravages of dental caries by adding it to water supplies which are fluorine-deficient. After study of many areas in this State which might be appropriate for a demonstration of this procedure, Newburgh and Kingston were considered admirably suited as study and control areas respectively. Through the foresight and progressive public health viewpoints of the civic officials, who saw its potential benefits, both cities agreed to cooperate with this Department in determining the practicability of such a measure. This demonstration will probably set a pattern which may be followed by other communities in which the public water supplies are deficient in fluorine.

The demonstration will take about 10 years to determine the value of such a procedure. Data to date indicate that the benefits derived from ingested fluorine water accrue during the years of tooth development, that is, through age eight (excluding third molar). After the teeth have calcified, the fluorine taken in by means of potable water is apparently not effective.

The cities of Newburgh and Kingston, each have a population of approximately 30,000, with comparable water supplies, population groups, climatic conditions, economic status and sources of com-



—Courtesy Wallace & Tiernan Co., Inc.

Two views revealing the working parts of the device used at Newburgh, N. Y., for feeding sodium fluoride into that city's water supply.

mon food supply. Newburgh, as the study area, is to have its potable water supply treated with sodium fluoride to bring its fluorine content to within the limits of 0.9 to 1.0 ppm. Kingston, whose water supply is fluorine-free, is to continue using fluorine-free water, and will serve as a control in this demonstration. The fluoride is to be added in measured amounts to Newburgh's water supply through the use of low capacity dry feed equipment. This equipment is capable of feeding sodium fluoride in such small quantities as one-half pound per hour, with a maximum capacity at 8.9 pounds per hour. With allowance for seasonal changes in the low fluoride content of Newburgh's water it will be necessary to add about 17 pounds of NaF per million gallons of water treated or 51 pounds for the city's daily supply.

The daily water consumption, especially in children, varies with atmospheric conditions, such as degree of temperature and humidity, and as far as the individual child is concerned, with the type of diet he consumes and the amount of energy expended by muscular activity. Dr. F. J. McClure, of the U. S. Public Health Service, using Adolph's method of determining the daily water requirements as 1cc per calorie of energy in the daily diet, has estimated that when the drinking water contains 1 ppm of fluorine and the food in the dry substance contains 0.1 to 1.0 ppm F, the total fluorine intake for children from the ages of one to 12 would be of about the following order:

Age	**1–3 yrs....**	**0.417–0.825 mgs.**
	4–6 yrs....	**0.556–1.105 mgs.**
	7–9 yrs....	**0.695–1.380 mgs.**
	10–12 yrs....	**0.866–1.725 mgs.**

Briefly stated, these figures show, that under the conditions indicated, the total fluorine intake for children ages one to 12 years, would be from 0.4 to 1.7 mgs. daily. Since it is assumed that an adult consumes about two quarts of water in a day, lethal dosage could be obtained only upon addition of 50,000 pounds of sodium fluoride to Newburgh's water supply in a day. Sub-lethal dose of 230 mgs. would require nearly 3,000 pounds of sodium fluoride. The margin of safety is clear when it is remembered that an allowance of only 51 pounds per day is proposed as optimum and that it will be delivered by feeding equipment which cannot release more than 216 pounds per day.

Weekly Analysis Planned

Determination of the fluorine content will be made from tap water samples and will be made according to procedures developed and published by a committee of the American Water Works Association. Samples will be analyzed weekly at the filtration plant, and will be checked from time to time by the Division of Laboratories and Research of the State Department of Health in Albany.

Examinations for dental caries experience will be made annually for all five to 12 year old school children in both Newburgh and Kingston. Approximately 3,200 children in each city will be exam-

ined by a member of the staff of the Dental Bureau of the State Department of Health. Children showing dental defects will be referred to their private dentists for treatment. In addition to the clinical dental examinations for cavities about 500 children in each city will have bacteriologic examinations to determine the presence and quantity of the lacto bacillus acidophilus in the saliva. Information regarding the presence of lacto bacillus acidophilus in the saliva and the extent to which these acid producing microorganisms are present may serve as a useful index of caries activity.

While the main purpose of this demonstration is to determine whether fluorine therapy through communal water supplies may protect teeth against dental decay, it will also help to determine the effects of trace quantities of fluorine on other tissues and organs of the rapidly developing child and in the older segment of the population.

Physical examinations will be made at regular intervals on a group of 500 children in the study area. These children will be equally distributed as to sex and age from birth to 12 years. On children up to two years the general physical examinations will be repeated every three months; thereafter examinations will take place every six months unless otherwise indicated. A similar group of children will be examined in the control area at the outset of the demonstration. These children will be re-examined only if findings in Newburgh should indicate the need for additional study.

Special attention will be given to questions of physical and mental development and emotional stability of the children studied. All subsequent examinations will be accompanied by an interval note with emphasis on alertness, fatigability and irritability. X-ray studies of the bones and centers of ossification and laboratory tests including blood and urine analyses will supplement the physical examinations.

Physical examinations will be made on a group of 150 adults over age 50 years, equally distributed as to sex, in both the study and control areas. The group will be examined at regular annual intervals unless indications point to the desirability of more frequent review. As in the children's examination skeletal X-rays as well as laboratory tests will supplement the physical examinations.

This demonstration will cost approximately $25,000 a year for a period of 10 years. Should this plan prove to be practicable, however, then any city having a satisfactory water treatment plant will be able to fluorinate its water supply at the very nominal cost of the chemical feeding equipment, which for a city the size of Newburgh is about $350 (this is a nonrecurring item), and the cost of the sodium fluoride which at the present market price is $7.75 per 100 pounds. For a city like Newburgh using 3,000,000 gallons of water daily for all purposes, the cost of sodium fluoride is approximately $1,500 per year, or a per capita cost of only five cents. No additional personnel will be necessary.

Conclusion

Investigators of the U. S. Public Health Service and other well qualified scientific workers have repeatedly found that children reared in different parts of the United States where their drinking water naturally contains low concentrations of fluorides, show a much lower prevalence of dental decay than children living under similar conditions in areas where their water supply is fluorine-free. In order to derive the benefits of fluorine in the water supply, the children must ingest this fluorine during the years when their teeth are developing.

This data strongly suggests the possibility of whole communities improving the dental health of their citizens by treating their communal water supplies so that they contain an optimum concentration of fluorine.

Before the principle of fluorinating water supplies, deficient in fluorine, can be generally advocated it is necessary to demonstrate conclusively several important conditions:

1. Will artifically fluorinated water produce the same beneficial results as those waters in which fluorine is found naturally? There is every reason to believe that this is so, but it must be demonstrated.

2. Are there any cumulative effects, beneficial or otherwise, on tissues and organs other than the teeth, of such small concentrations as one part per million of fluorine in water over long periods of time? Again, there is much presumptive evidence that there are no such effects but until that is demonstrated conclusively, this procedure must be regarded in the light of an investigation.

3. Safe and practical methods of adding this agent to potable water supplies must be developed and demonstrated.

When these three factors have been well established, public health agencies will have a simple and efficacious means of controlling this almost universal disease through mass therapy at a very nominal cost.

"The proper feeding of children is as important as any lesson in the classroom."

School Lunches—An Investment in America!

By Edith C. Cheney[1]

Supervisor, School Lunch Program
New York State Education Department

—Courtesy N. Y. State Education Department

Improvised school lunch room. Problem of space, not provided in the building, and with the school crowded, was solved in Union Free School District, Brentwood, L. I., as shown here. Corridor was used, and children appear to be happy enough about it.

It is very apparent that the majority of people haven't the awareness that the minorities have who are always "fencing" us in. Many of our present day ills could be eliminated in the future years if we (the majority) would become more active and articulate; therefore it is someone's duty to draw the attention of the

[1] Mrs. Cheney, as member of Assembly, was a member of the Joint Legislative Committee on Nutrition. She is now Supervisor of the School Lunch Program of the New York State Education Department.

community to the value of the school lunch program and to make an appraisal of local conditions. Since this program has taken growth all over the country many civic-minded groups are eager to be more informed on the subject. Lunch programs are being sponsored by many local organizations throughout the State including Parent-Teachers, women's clubs, home bureaus, men's service clubs and numerous other civic-minded groups.

In going over New York State the past four months, my travels have taken me to 17 counties. Numerous school lunches have been sampled, many of which have been excellent and some of which leave much to be desired. In addition to the schools visited, it has been my pleasure to attend three regional meetings of district superintendents of schools and to speak at numerous meetings of women's organizations throughout the State, besides working with 27 district superintendents on the development of school lunches in their districts.

Having looked over the State to some extent, it is not hard to pick out the good and less favored places. Where the community spirit has taken on new life and school centralizations are in progress the supplying of a good school lunch is not as much of a problem. It is part of the school program and usually runs on a paying basis, whether Federally reimbursed or not. However, where the schools are following the old patterns, the program is often haphazard and frequently makeshift. The one- and two-room schools that many of our boys and girls are still obliged to attend, sometimes due to a lack of imagination on the part of the communities or to causes like wartime material shortages, are the places that this program is most needed. Here lies one of our biggest jobs.

Probably if the war had not interfered, more centralization would now be in operation but until these can be established we must use the facilities we have. Unfortunately, growing children cannot wait for schools to be built or wars to be finished. Their bodies are being built and are changing every day for better or worse. Many children from well-to-do families where food is plentiful are underfed nutritionally.

Let's forget the idea that the school lunch is a feeding program and remember also that it is not a charity program. It is an educational program to meet both physical and social needs of children. If there are doubtful Thomases then let's go on some community tours and visit one or two of the schools where the lunch program has really been worked out from the ground up.

Our first tour will be to a lunch program conducted by a Board of Education starting in the Spring of 1942. The children were bringing their lunches from home and the school was selling milk to supplement it. As the building did not provide adequate space, the auditorium was used for a lunch room. Tables were set up daily and then removed as it was also necessary to use the auditorium for a gym.

Space Poses Problem

The first big problem was space and after much debate and inspection two store-rooms, one having been used for coal storage and the other for janitor supplies, were selected. A concrete partition was removed, additional windows and an outside door provided and the result was a fine lunch room.

With the aid of an engineer, plans were drawn and work started. Priorities prevented the Board from supplying a gas range but the year before the far-sighted Board had bought an electric range, refrigerator, sinks and cabinets. Tables were on hand, so benches were built to accommodate 10 children at each table. This made it possible for 70 children to eat at one time.

Two cooks were hired to prepare the food and the P.T.A. was contacted to provide volunteer help to be on hand each day to help with the serving and dishwashing. The response was wonderful. To supplement this, the Canteen of the local War Council responded as did many other civic-minded women even though some of them did not have children in school.

The Board of Education investigated the use of Federal funds under the United States Department of Agriculture's program for school lunches. Proper contracts were made which provided a subsidy of nine cents for each meal served. The children were charged 10 cents for their meal. This made 19 cents working capital available for each meal.

Next the menu was tackled. At the War Food Administration's suggestion, a blue plate lunch—consisting of meat, potatoes and vegetables, or an egg, fish or vegetable combination—was served. In addition a half pint of milk was served, plus bread and butter and a dessert. Simple desserts were chosen, preferably fresh fruit, jello, apple sauce or custard.

At this school an average of 200 children daily ate a hot lunch. The stagger system was used beginning at 11:30. The tables were set with silver, milk and napkins. Twenty minutes was allowed for the lunch period of each group. Each child as he finished eating took his soiled dishes to the disposal table.

All meals were identical; so it was a simple matter for the principal's secretary to collect 10 cents from each child as he entered the room. She also has charge of the financial accounting, which is done in the school office.

At this particular school the head cook and school nurse planned the menus. The Federal Department of Agriculture's list of abundant foods was very helpful in working out their plans.

A close check kept of the children eating daily in the lunchroom showed that they all had gained weight, and an improved alertness in the classrooms was noted. Parents reported the children were eating better at home and that they repeatedly asked for various dishes served at school.

The health habits of the children were closely watched. Each teacher allowed her children ample time to go to the basement to wash before eating. Teachers were present throughout the meal so that good

table manners and low conversational tones were emphasized. This created a fine social atmosphere and provided a closer contact between the children, teachers and parents.

In addition to the lunch period at noon two 10-minute periods were provided for the serving of milk (sold at three cents per bottle), and to eat a cookie or sandwich brought from home. This snack was served in the children's own class rooms.

The Board of Education stated in its report that it had been a gratifying experience to have been able to provide a suitable lunch program for the children. It stated further: "The results to the children have far outweighed the initial cost of providing the necessary facilities for operation."

In the Smaller Schools

Let's go on to our second story. This is entitled "A Hot Lunch Program For the Small Rural School."

In 1941 a number of parents attended a meeting to discuss the possibilities of a hot lunch program for their children. At the initial meeting they discussed too the methods of organization, existing facilities and financing.

The Mothers Club, an organization similar to the Parent-Teachers, had originally called the meeting. Acting on its advice, a hot lunch committee was appointed and immediately went to work. Help was obtained through volunteer services of the mothers in the community. Schedules were arranged and definite days a week set for each mother who could assist regularly. A substitute list was arranged. Two mothers helped each day. During the first year of the program the cooking was done by the mothers until the balance in the treasury allowed the hiring of a cook.

There was a spirit of co-operation and friendliness in the group. Four of the women on the committee had no children and one member did not reside in the town but worked on the committee to gain experience for the class in Red Cross Canteen.

The committee was fortunate to have available the use of the old school building just across the road from its new school. The building had been kept in good repair and was being used as a community hall. In the rear were two small rooms. These were furnished with gas stove, an ice box donated by an individual interested in the project and dishes, also donated. Silverware, pots and pans were either donated or purchased.

Plank-like tables on wooden horses were constructed. The chairs were already on hand in the community hall. A procedure of taking down the tables each day was established so that there would be no interference with school or community functions. Oilcloth table covers were permanently attached. A minimum number of dishes was used at each meal, though care was taken to allow an adequate number so that the children might learn good manners and table etiquette.

Balanced Meals Provided

The committee decided in the beginning that funds should be

donated by the parents. This varied according to circumstances and all were served whether they paid or not. The report stated:

"This is one of the finest features of this program. Children who need the food most are receiving it. Also during the war period when food is scarce and expensive and some parents find it difficult to provide well balanced meals their children receive, at least once a day, a scientifically balanced meal."

As this program progressed other means were used to finance it—such as surplus foods. Finally Federal reimbursement of nine cents for every meal served was adopted.

The organization of the committee now has seven departments.

1. A parent arranges menus one week in advance and displays them on blackboard for all to see.

2. A parent does all the purchasing.

3. A treasurer receives all donations and financial aid, distributing it to the various departments.

4. A parent pays the bills, using money provided by the treasurer.

5. A parent attends to reports for Federal aid.

6. A parent heads the committee on serving.

7. A paid cook is hired to prepare the meals.

The pupils have participated in the program, some in setting the table, serving and preparation. Others have discussed the program in their classes, especially with the school nurse in regard to a balanced diet.

Each day in this school the boys, girls and teachers assume certain responsibilities. The boys assist the school custodian in setting up tables and chairs and in removing them after meals. The girls help with the serving and the clearing up. The teachers supervise and guide the children in selecting food, in good manners and good citizenship practices. The teachers tie up this program with Health, English, Art and Social Studies.

The guidance counselor staged a demonstration lunch, using boys and girls from one of the classes. Two demonstrations were given, one showing the right way of eating and the other depicting the incorrect way, which resulted in a discussion of table manners and social behavior.

Some of the teachers have made the following statements:

"The children have learned to eat with people, to eat different foods and to share things."

"They have shown remarkable progress in behavior in the lunch room."

"Friendly discussion over a meal helps these children to understand each other better."

"Eating with other children is an entertaining, educational and self-satisfying experience."

"At school the children have the opportunity to eat with children of their own age. Very few children enjoy the good fortune of having companionship of the same age at home."

The remarks and ideas from these two schools are only a few of the comments of the benefits of this program to the children of our

State. Communities must recognize the value and accept it.

Groups must be informed about the needs for the program and must be willing to give assistance, boards of education must be willing to provide adequate space, equipment and labor. Teachers must be willing to contribute and share in the program.

The proof of the pudding is in the eating. Here is the menu for one week served during March in one of our schools.

Monday—Cream of vegetable soup with egg salad sandwich on whole wheat bread, applesauce, milk.

Tuesday—Beef vegetable stew, bread and butter, milk, oranges.

Wednesday — Baked potato, cream dried beef, whole wheat bread and butter, cabbage salad, milk.

Thursday—Meat loaf and buttered spinach, carrot strips, whole wheat bread and butter, apples, milk.

Friday—Macaroni and cheese with tomato sauce, whole wheat bread and butter, fruit custard pudding, milk.

The above menu cost the children 10 cents. This is made possible by the use of Federal reimbursement from the War Food Administration and an appropriation from the Board of Education.

Many excellent school lunch programs are in existence throughout the State. Not considered here are the lunches organized in the centralized school or villages and cities under direction of Home Economics teachers or school lunch supervisors or dietitians.

The school lunch program is past the experimental stage. The proper feeding of children is as important as any lesson in the classroom and must become a part of the total school program. It takes a lot of planning and working together to bring about any advancement in our American way of life. Working with and for the improvement of children's nutrition is a definite need. We can see the investment before our eyes. The returns will be up to us.

The School Lunch Program

(As noted in the Fourth Annual Report of the New York State War Council—1944)

Reports from Schools: Schools were asked to report on their school lunch programs June 15, 1944; 2,575 schools reported. Many schools having lunch programs did not report but because this was not a required report, attempt was not made for 100 per cent returns. These reports have been analyzed and the results will be used as a guide in directing the programs, promoting new programs, and interpreting the needs of the schools for supervisory assistance. A few facts will indicate the need for continued emphasis on the importance of a school feeding program.

Of the 2,575 schools making the report 54 per cent reported that they had no lunch program, 7 per cent reported having a milk program, 17 per cent reported having a lunch to supplement what the children are bringing from home, and 22 per cent reported having a complete lunch. In the 1,398 schools reporting no lunch program, 932 were rural schools with less than 25 enrollment. A total of 544 schools with no lunch program reported that over 75 per cent of their pupils remained in school at noontime. Some 591 schools reported that a complete lunch was served, yet only 32 per cent of the pupils in the schools with an enrollment of 500; 199.9 had the complete lunch, while those schools with an enrollment of under 100 served a complete lunch to only 10 per cent of their total enrollment.

The supervisors have observed that schools are having problems with:

Planning adequate menus to meet the nutrition needs of children.

Managing with available labor, equipment and facilities.

Having foods prepared to save the maximum nutritive value.

Using the eating period for teaching food selection, table manners and accepted social behaviors.

Including the school lunch in the health teaching program throughout the school.

(Reprinted by special permission of the publishers of 'Pic' Magazine)

Frozen Food Lockers[1]

Locker-freezer Plants Save Money and Food for Rural Residents, Offer Big Business Opportunities

When meat arrives at the locker plant it is weighed and marked with identifying tags. It is then hung on hooks which move easily on an overhead metal trolley. It can be moved anywhere in the plant without lifting.

Admiral Richard E. Byrd may have, unknowingly, started a new industry when back in 1928 he wrote about how he preserved the Expedition's food by allowing it to freeze in the below-zero temperature. Today the Quick Freezing Industry is one of the country's youngest and healthiest, doing a volume business of $100,000,000 per year, and offering post-war opportunity to thousands of returning veterans.

In 1936 there were only 300 frozen food locker plants, mainly in the Middle-West, and there are now 5,000, the newest and most modern being Country Life Frozen Foods, Inc., the first freezer-locker plant on Long Island, located at

1 This article and the accompanying photographs appeared in the January 16, 1945, issue of 'Pic' and are reprinted by special permission of the publishers, Street & Smith Publications, Inc.

Westbury. This plant (a delight to the aesthetic eye as well as a service to the community, for its design resembles a low, rambling modern white farmhouse surrounded by a picturesque fence and baby fir trees) opened in October and already is doing near-capacity business. It is predicted that by 1953 there will be 50,000 locker plants in operation all over the country. Also anticipating a boom are related industries, which include manufacturers of containers and packaging materials, of insulation materials, contractors, etc., to name a few. Refrigerators, too, will help the industry, for a number of these firms have already applied for patents to manufacture postwar refrigerators part of whose storage space will be devoted to zero or sub-zero compartments for storing frozen foods. Even supposing that people will be able to store frozen foods in their own refrigerators, the foods, meat especially, must first be processed at a locker plant.

At the moment, in order to obtain permission to build a locker plant, or to convert an already-erected plant for the purpose, and to obtain the necessary priorities for materials a majority of the lockers must be reserved, and rentals paid, in advance. The services offered are so obvious that this is not difficult.

The man with money to invest in such a venture need know little about it, for the firms who build such plants offer, in addition to planning and building, advice on prospective sites (an ideally located locker should be easily accessible from miles in all directions by car), information concerning the plant's successful operation, merchandising and advertising and even help in the selection of the type of personnel best qualified to operate the plant. Capital necessary for the project depends on size and location of plant.

In addition to processing and storing foods some plants are equipped to sell frozen foods. The farmer brings his surplus meat, vegetables and fruit, which might otherwise go to waste, they are processed and offered for sale at cost far below current prices (which must include the cut taken by the wholesaler and the retailer in the city). Eventually, it is predicted, Quick Freezing and Locker plants will have retail store outlets in nearby cities and towns, enabling the farmers in the vicinity of the plants to dispose of every last vegetable and piece of meat, and enabling the city-bound consumer to purchase the desired food no matter the season.

The Department of Agriculture is constantly conducting laboratory experiments to discover just how many types of foods can be frozen satisfactorily. So far, the list includes 90 per cent of all the food you eat at any season in the year. This even includes pies, pastries, biscuits and bread! Most vegetables can be frozen after blanching, and fruits, with the exception of citrus fruits (the juices can be frozen, however). Meats can either be frozen or smoked (in which case they are stored in a special room) and fish, including oysters, can be so preserved.

Parts of meat which are to be aged (fat, etc.) are removed before it is taken to the chill room. Preliminary cleaning, removal of head, is done at government approved slaughter houses before reaching plants.

The industry is not only potentially a partial solution to postwar unemployment, but a great help to any food conservation program and a godsend to people in rural districts. The farmer and gardener, before the advent of locker plants, found that much of his produce spoiled before it could be sold or consumed, but processed food stored in freezer-lockers will keep indefinitely. People who dwell in small towns (especially in the states north of the Mason-Dixon Line) are usually forced to exclude from winter menus all fresh vegetables, for these are shipped *from,* not *to,* rural areas and into metropolitan areas. A locker plant is the solution to this problem, for vegetables and fruits can be picked at the peak of the season, processed and stored for winter consumption. These are not canned, they are *fresh* when consumed. The cost for a frozen food locker is small. Prices differ a little in various sections of the country, but to use Country Life Frozen Foods, Inc., as an example they are as follows: rental for a drawer-type (two bottom tiers, for the lockers are in seven tiers with a safety-type ladder available for access to top tiers) $22.50 per year. These are 18″ by 20″ by 30″ and hold from 175 to 200 pounds of food (with the exception of chickens, which are light and bulky). The next two tiers, door-type, 15″ by 20″ by 30″ are

Different cuts of meat are individually packaged, bound in colored tape (blue for pork, etc.). The plant provides paper wrapping only, but special containers, cellophane, etc., are on sale.

After the food is wrapped, it is placed in the Sharp Freeze room (note icicles). It remains here overnight in a temperature of 30° below zero, Fahrenheit.

Meat is first put into the chill room overnight (temperature 32). Pigs are processed immediately afterward, but other meats are put into aging room for varying lengths of time, depending on age and type.

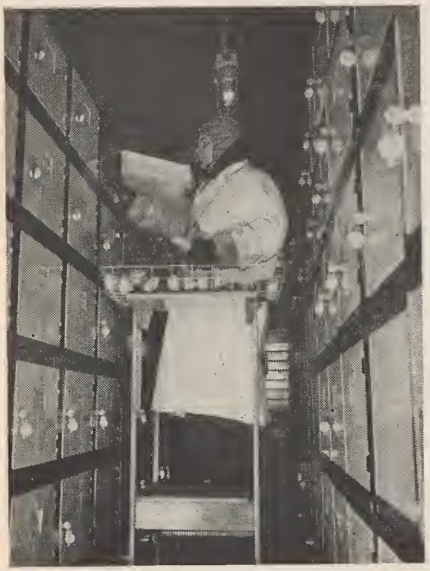
After aging beef is brought into processing room, cut into steaks, chops, ground meat, etc. Owner of the meat specifies how it is to be processed. Ham or pork is cured and smoked, kept in special room.

Locker plant has efficient method for killing chickens. Bird is placed head down in metal funnel in rack over sink. Bird is then dipped into thermostatically-controlled semi-scalder, then defeathered. One man in plant can kill and clean 250-300 birds in an hour.

$20 per year, and the top three tiers, also door-type, same size, are $17.50 per year. These prices are nominal, for the experience of locker-freezer plants has proven that locker-renters have saved from 25% to 40% of their annual food bill.

From the time that a locker-owner brings his meat in to be processed a complicated procedure ensues. First of all the meat is weighed. (Livestock has to be killed, of course, by a Government-approved slaughter-house, and so is already slit and drained. This does not apply to fowl which can be killed in a room set aside for the purpose, in the locker-freezer

This ingenious device takes off the feathers. A cylinder in the center bristles with rubber spokes. When the cylinder turns (as it is doing here), the chicken is held against the whirling spokes, creating a friction which pulls off feathers cleanly and rapidly.



Manager of Country Life Frozen Foods, Inc., G. Stuart Wishart, puts the frozen foods into individual lockers. He wears Arctic attire because temperature in the locker room is zero. Ladder is non-skid.

Customer (in sheep-lined coat provided by plant) emerges from locker room (door rear) into well furnished front office.

plant.) The meat is first weighed and marked with identifying tags. After this it is placed in the Chill Room. In this room modern cooling and air-circulating devices maintain a constant temperature of 32° Fahrenheit. For 24 hours the meat is kept in this temperature. It is then ready for the Aging Room. In these two rooms the air is treated with ultra violet rays from Westinghouse Sterilamps. This kills all air-borne bacteria and prevents mould. In the aging room inspectors check the meat daily. When aged it goes to Processing Room.

In the Processing Room the sides of meat are cut into the parts specified by the owner (so many steaks, chops, pounds of ground meat, etc.), each is separately packaged and marked, then put in the locker room (temperature zero), in the locker rented by the owner of the meat. Each locker-owner has his own key, and he is free to come in and out of the locker-room at any time during hours specified without any formalities.

Hams are cured (to the customer's taste) in special curing rooms, in which they remain from 10 to 21 days before smoking. Hams are smoked in hickory sawdust ignited by a gas flame and are usually in the smoking room from 24 to 48 hours.

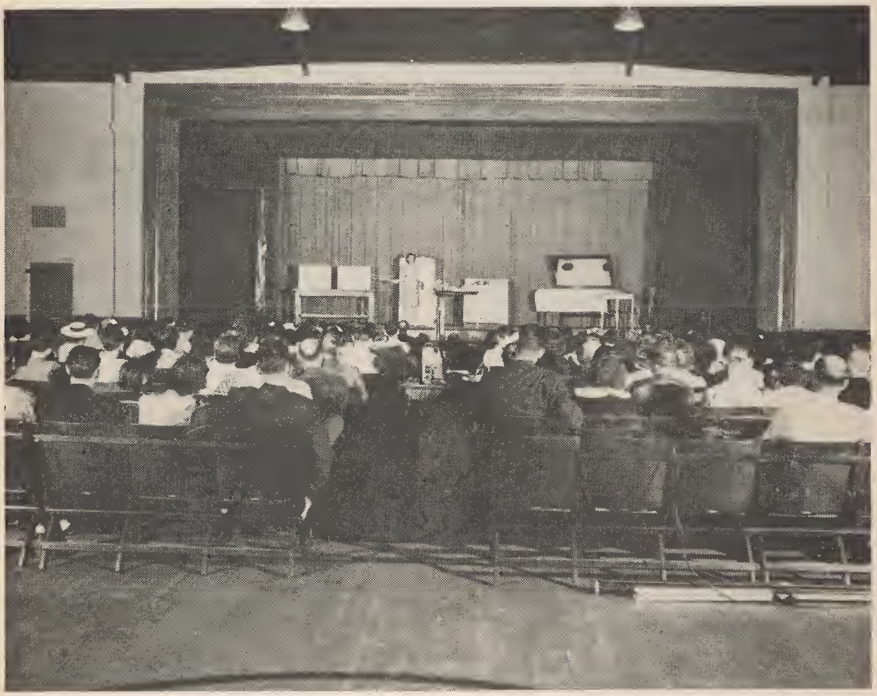
Country Life Frozen Foods Inc. has a special room for killing and defeathering chickens, a room for processing fish and another for steam-blanching and preparing vegetables and fruits for freezing

and storing. All this in addition to a really charming lobby or waiting room, wood paneled, for the use of customers. (Incidentally, the names on the lockers of this plant read like the Social Register, but please do not infer that this service is only for the rich!)

In sum, the Quick Freeze Industry is destined to become one of the greatest in the future, not only because of the invaluable service rendered to the community but also because of the almost unlimited business opportunities offered to any far-sighted investors.

Public Interest in Nutrition Sharply Spurred by the War

(Reprinted by special permission from Swift & Company Yearbook 1944)



Food rationing and shortages made millions of Americans abruptly food and nutrition conscious

Nutrition has bridged a wide gap in the past few years—from the scientific laboratory to the family dinner table, from heavy textbooks to our daily newspapers and our magazines.

Two national events brought nutrition into the limelight. First, selective service, when one-third of the men rejected had physical defects probably resulting from poor nutrition. Then came Pearl Harbor, and our Nation was at war. Food rationing and shortages made millions of Americans abruptly food and nutrition conscious.

With substitutes for established foods springing up in markets, and with new emphasis on planning meals wisely for health's sake, homemakers of the Nation wanted to know more about this relatively new science of nutrition. Information was given in quantity through newspapers, magazines, and radio; from Government agencies, the Red

Cross, food industries, home economists, doctors, and nutritionists.

Instead of "proteins, carbohydrates, amino acids, enzymes, milligrams," women learned about seven foundation food groups, a simple pattern for well-balanced meals. Slogans were as simple as "Every day eat this way."

One result is already evident. The American people as a whole are better nourished, in spite of the war, than ever before in history. One reason is that millions of men and women in the armed services are eating far better meals than they did in civilian life. On the home front, increased income has made it possible for many families to buy better foods in greater variety and quantity. Educational and research programs on nutrition are putting more information into working use.

The war-speeded trend toward wide public interest in modern theories of nutrition cannot be overlooked or dismissed by any part of the American food industry in plans for postwar resumption of business under a free and peaceful economy. A healthier people leads to a stronger nation with greater capacity for clear thinking, work, and production—all of which contribute substantially to a sound economic prosperity. Men and women wage war better and work better when an improved diet for health and energy is available to them.

". . . we shall lift ourselves nutritionally by our institutional galluses, of which advertising is one."

Advertising and Food

By James Rorty

Author of "His Master's Voice"—a Criticism of Advertising

EVERY year the American people season and inflate their food with large quantities of expensive advertising. To a considerable degree, this advertising determines what we eat and how much we pay for it.

Not only is advertising one of the principal determinants of our food habits; as an enterprise in the manipulation of belief, concerned equally with accentuating the positive and eliminating the negative, advertising is also indirectly responsible for the curious legend, embodied or at least implied in current government-sponsored documents, that advertising both does and does *not* influence food habits; that the *good* food habits which constitute the hope of our nutritional salvation are immaculately conceived and given unto us through the disinterested zeal of nutritionists, enlightened food processors and advertising men, whereas the *bad* food habits —our addiction to white bread and white sugar for example—are the result of some kind of Original Anthropological Sin.

Actually, of course, advertising is a two-edged weapon which cuts both ways. It is a "pure" technique, as innocent of inherent moral content as are the weight tables by which the nutritionist measures the growth of his laboratory rats. What happens when the advertising technique is employed is good, bad, or indifferent from the standpoint of the public interest, depending on who uses it, where, how, and for what purpose.

It is important to distinguish between the advertising *technique* and the advertising *business*, the latter being defined realistically as the total apparatus of advertising-supported newspapers and periodicals, broadcasting stations and agencies, together with various collateral branches and services of supply such as printers and lithographers that come loosely within advertising's widely ramified community of interest. It is the advertising *business* that is responsible for the legend, cited above, that advertising carries no responsibility for causing and perpetuating the national malnutrition which it is now being used to remedy through its enthusiastic sponsorship of the "enrichment" program. This is nonsense, of course, but it is not safe for any nutritionist or social scientist in an exposed public position to say so. Hence the atmosphere of unreality and make-believe that stultifies much of the current public discussion of food and nutrition problems.

What Is Lacking

For example one looks in vain through the 176-page bulletin en-

titled "The Problem of Changing Food Habits," issued by the National Research Council, for any mention of the role of advertising in changing food habits both for better and for worse, as well as in creating good and bad food habits —Coca-Cola for example—and imposing them *de novo* upon the population. Why? And why has the Committee on Food Habits of the National Research Council undertaken no study of a problem which falls so clearly within its field of interest and responsibility? Why does not the Nutrition Foundation finance such a study, especially in view of the fact that the Foundation is itself supported by a representative list of the largest food advertisers in America?

Nothing could be more tactless, of course, than to raise such questions. Nutritionists and social scientists, no matter how honest and how devoted to the public interest they may be, can scarcely afford to risk their careers by such tactlessness; hence they will not mind if I serve as their proxy.

It is a conscious or unconscious bowing to the taboos wielded by the advertising business, one suspects, that obliges Russell M. Wilder and R. R. Williams to write their recently issued pamphlet entitled "Enrichment of Flour and Bread" in a kind of historical and economic vacuum.

In this document, prepared with the aid of the Committee on Cereals of the Food and Nutrition Board (on which sat, with manifest impropriety, at least one employee of the milling interests), no mention is made of the 20-year record of the organized milling and baking industries in forcing the sale of white flour and bread because it was profitable for them to do so, despite the recognized nutritional deficiencies of these products and the demonstrated effects of these deficiencies. No mention is made of the implacable pressure of commercial cereal processors and advertisers on food scientists in and out of Government service, and on the editors of newspapers and magazines. No mention is made of the campaign, at once unscientific and unblushing, launched by the organized milling and baking interests in 1925 with the cooperation of the organized medical profession and its official press, designed to smear as "food faddists" those informed and public spirited physicians, dietitians, home economists, and health officers who were trying to bring about the general use of whole wheat bread, and who but for this and other stabs in the back might have succeeded. No mention is made of the fact, established by repeated studies sponsored by the Federal Trade Commission, that for at least two decades the price of bread has been controlled by the handful of large chain bakers who dominate the industry. No mention is made of the fact that this price has been kept higher than anywhere else in the world—25 per cent higher even than in Canada according to a study sponsored by the Bureau of Agricultural Economics where the costs of materials and labor are comparable.

Is the price of bread an important dimension of the American nutritional problem? The distin-

guished nutritionists who discussed the fortification proposals first broached at the 1939 convention of the American Institute of Nutrition all thought so and said so. Yet Messrs. Wilder and Williams do not quote them. Especially they do not quote Dr. W. H. Sebrell, nutritionist for the United States Public Health Service, who was later to become one of the most enthusiastic advocates of the enrichment program, but who said on that occasion:

"**. . . It does seem a little ridiculous to take a natural foodstuff in which the vitamins and minerals have been placed by nature, submit this foodstuff to a refining process which removes them, and then add them back to the refined product at an increased cost. Yet this seems to be the thing that is being proposed. If this is the object, why not follow the cheaper, more sensible, and nutritionally more desirable procedure of simply using the unrefined or at most the slightly refined natural food . . .**"

Has anything happened during the past six years to make the enrichment program seem less ridiculous in 1945 than it did in 1939? On the contrary, the trend of later research findings has emphasized the importance of the nutritive elements, known and unknown, which are largely removed by modern milling processes and not restored by the enrichment formula. The program, by the admission of its advocates, was and is a dubious, inadequate, and expensive makeshift, calculated to appease existing vested interests and to create new vested interests in the materials of fortification. Virtually its only justification was the belief, doubtless sincerely held by its scientific sponsors, that the American addiction to white flour and white bread was irremediable, being due to the perversity of the consumer—to Original Anthropological Sin.

What Can Be Done

Speaking as a former advertising man, I do not share this belief. The advertising technique can be used and has been used to promote good food habits as easily and as effectively as to promote bad food habits. Admittedly, once the white bread pattern had become established, it was much easier for the milling and baking industries to continue it in all the several departments of production, distribution and advertising than to change it. But it could have been done, and the reason it was not done is not the Original Anthropological Sin of poor old Throttlebottom, the American consumer. Dr. Samuel Lepkovsky is 100 per cent right when he declares in the April 1944 issue of *Physiological Review:* "The unpalatability of whole wheat bread and the alleged refusal of people to eat it are myths and have no foundation in fact."

Fortunately, our advancing food science and technology is as skeptical of myths, anthropological and otherwise, as is Dr. Lepkovsky. Either I am very much deceived, or the whole enrichment idea will be overwhelmed within a few years

after the war by a multitude of other and better applications of nutrition science. How long before the breeding, growing, and segregated milling and marketing of high vitamin and high mineral grains gives us a completely new set of nutritional dimensions for the cereals? How long before we begin to utilize the huge nutritional potential of food yeast? Of soybean and sunflower seed flour? How long before improved processes of extraction make sugar—of which the Army is currently consuming perhaps eight times too much — nutritionally respectable again?

Advertising will be used to promote these developments—and the pressure of the older advertising vested interests will be used to abort them. Advertising will serve God and Mammon indifferently, alternately, and even sometimes simultaneously. The linked community of interest of the earlier advertising-created hegemonies over our food habits will creak and groan as new claims are staked out. The publishers of The Saturday Evening Post and the Women's Home Companion will have some bad moments. Sweatingly, we shall lift ourselves nutritionally by our institutional galluses, of which advertising is one.

And what should be Government's role in all this? Both less and more, one hopes, than its wartime role. Government needs to add substantially to its arsenal of regulatory yardsticks. We must have *both* grade labelling and nutritional labelling in the interest of *both* the consumer and the honest food processor. And if we are obliged to go in for relief feeding—as we probably will—that's a chance to develop other food yardsticks, over and above what the rapidly growing consumer co-ops will be providing.

Finally, the Government should get out of the advertising business as soon as the war is over or preferably sooner. Speaking as a former professional, I am not impressed by the high-minded amateur efforts that have been coming out of Washington recently. The advertising business is bad enough as it is. Let's not socialize it.

". . . health is man's birthright. It is as natural to be well as to be born."

Vegetarianism and Nutrition

By Gustavus A. Almfelt, M.D.; A. M. Liebstein, M.D.; Max Warmbrand, Ph.t.; and Symon Gould, Associate Editor of The American Vegetarian

THE VEGETARIAN diet is as old as man. By studying the evolutionary processes of nature, we are able to discover his true place in relation to natural phenomena and by examining the qualities and chemical compositions of the different articles of food, and their functions and effects in human nutrition, we are drawn to the irresistible scientific conclusion that the vegetarian diet is the natural diet of man.

According to their bodily structure and their capacity to provide, digest and assimilate food, comparative anatomy divides the mammalia, to which man belongs, into four distinct classes; the omnivorous, the carnivorous, the herbivorous and the frugivorous. Man's strong resemblance to the anthropoid apes, which subsist mainly on fruits and nuts, places him in the frugivorous class. In fact, all the great anatomists, Sir Charles Bell, Dr. Richard Owen, Dr. William Carpenter and Baron Cuvier, have demonstrated that man is not only adapted by anatomical structure to a diet of fruits and nuts, but that man's deviation from his natural diet has become a source of endless suffering and disease.

This fact, which was recognized in previous ages by the ancient sages, Plato, Socrates, Pythagoras, Seneca and others, has also been confirmed by the great universal law of evolution, which Lamarck, Darwin and Haeckel have scientifically established, and which has thrown much light upon the origin of life and its development on our planet.

The history of organic life on this earth is recorded in the sedimentary rocks of its surface and the strata of these rocks are leaves in the great books of nature in which is unmistakably revealed the evolution of life from the inorganic to the organic.

There are four strata in the development. The lowest forms of vertebrate animals, the fishes and amphibians, are found in the primary rocks. In the secondary strata appear fossils of reptiles, birds and mammals; in the tertiary strata, nearest to the surface, we find remains of the higher organized animals; while in the fourth strata appear the traces of more modern forms of life.

Between the development of animal and plant life throughout the ages exists a certain relation which is significant for the light it throws upon the problem of nutrition. Plants assimilate the inorganic matter, or, in other words, organize water and tissue salts, as found in the earth and air, into vegetable substance. Animal life, being of a higher order, must obtain its elements from organic sources.

All life originated in the water, which in the primordial age almost entirely covered our planet. The

lowest animal forms were nourished by the lowest plant forms; the ancient fishes, by the sea plants of that period; the monsters of the carboniferous period, by the coarse and luxuriant vegetation now stored up in coal beds; while the higher order of plants, especially the fruit trees, belong to the era of man and his immediate progenitors.

The fact that the majority of our flower-bearing plants and fruit trees are unknown in a fossil state, clearly demonstrates their recent origin, which must have been simultaneous with that of man.

Evolutionary sciences, therefore, offer us the logical conclusion that since man is the most highly developed animal, he can thrive best on such foods as contain the nutritive elements in the purest and most perfect form. In addition, the original home of man is also the home of the fruit trees, the largest portion of our best known varieties being indigenous to the South, spreading over the globe simultaneously with the wanderings of the human race.

Nutrition in Vegetables

It would, therefore, appear that the food of all animals was originally derived from the vegetable kingdom, which is the storehouse of all nutrition, as the animal organism cannot assimilate directly the soil elements. Some naturalists even maintain that no animals were originally carnivorous, but that the evolution of this class of animals was brought about by scarcity of proper plant food in a later geological period, and that still later, probably for the same reason, man was forced by famine to subsist on flesh food.

But, as the fact remains, that in the process of evolution, this temporary modification in man's diet had hardly any influence on his anatomical structure, this change must have occurred at a comparatively recent date of man's existence on this planet and apparently under the most adverse conditions. The importance of this fact and the conclusions which may be derived from it merit much more consideration by modern nutritionists than they have received thus far in an over-all study of modern dietary practices.

Evidence accumulates to support the contention that man with his perfected anatomy has lived on the earth for untold ages, and that natural cataclysms and not evolution developed the change from a frugivorous, or nut-fruit-vegetable diet to an omnivorous diet which includes flesh foods. It is quite probable that the so-called glacial period, or age of ice, which according to geologists occurred some 20,000 to 30,000 years ago and subjected organic life to altogether new conditions, also induced man to deviate from his original and natural diet after he had subsisted on fruits, nuts and succulent plants for many thousands of generations.

Cut off from the prolific tropical soil, a majority of the human race was compelled to resort to the use of many kinds of food hitherto repulsive, and dire want finally forced man to the slaughter of animals in order to provide him-

self with the necessities for his existence.

Modern laboratory tests in food science have proven that the body is composed of definite elements primarily found in the air and in the earth, and as food is essentially a building material for the body it is self-evident that our food should contain an adequate amount of all these elements if we expect to build and maintain a healthy and strong body through a long life of activity.

Nutrition, we have learned, is basically concerned with the building of cells and tissues and maintaining the body in a clean and vital state. It consists of two parts —the upbuilding and the eliminating—and both processes are equally important toward the final objective of a healthy, vital organism. The various stages such as mastication, digestion, assimilation, which serve to provide the nutritional elements to the billions of cells in our body, and the elimination of the toxins incidental to the ingestion of food and the bodily metabolism must be thorough and complete, to avoid conditions which create bases for illness and chronic disease.

The elements which constitute and enter into the formation of body structures and which are found in the air and in the earth are the four gases, carbon, nitrogen, hydrogen and oxygen and the minerals such as calcium, sodium, magnesium, lime, iron, fluorine, phosphorous, silicon, chlorine, sulphur and several others.

Nature converts carbon into sugar, starches and fat nitrogen into protein, hydrogen and oxygen into water; minerals are absorbed from the earth through the roots and leaves into the structure of plants and vegetables.

Vitamins Important

Because of the role they play in body-building processes, minerals and vitamins are of extreme importance. Proteins are essential for tissue building, while the starches, sugars and fats serve to provide heat and energy. But these are not the only functions the minerals and vitamins play in the formation and functioning of the bodily processes. They enter into the formation of the trillions of cells and every particle of tissue. They influence and regulate every function of the body through which life is maintained.

Raw, green leafy vegetables and fresh succulent fruits are the best sources of organic minerals and vitamins. Beans, peas, lentils, nuts, cheese and milk are the best sources of proteins. Fruits, whole grain cereals and root vegetables are the best sources of sugars and starches. Of course, all natural foods contain most of the various food elements in varying degree and quality; but because of food processing and manufacturing, many of these vital elements such as minerals and vitamins are lost or destroyed and even when a food is supplemented and enriched by synthetic elements, it is a poor substitute. Hence, man in his modern environment, to be properly fed for the full and vital functioning of his bodily structure, requires an abundance of fruits and vegetables in their natural

state, supplemented by milk, cheese, nuts and eggs for his protein supply.

It is a fallacy to think that one cannot maintain weight, create energy or enjoy full health on an exclusive vegetarian diet. The fact that over 3,000,000 vegetarians in the United States do so every day is complete refutation of that fallacy, and, in addition, that one can point to the hundreds of millions in Asia, Europe and other parts of the world who subsist regularly and have done so for untold generations on a strict vegetarian diet, is also sufficient proof to the contrary.

Such expert specialists in the fields of biochemistry and health as Professors Sherman and Irving Fisher of Yale University, among others, have stated that man today can thrive best on a lacto-ovo-vegetable diet, or milk, eggs, vegetables, fruits and nuts. We have seen the vegetarian diet make enormous strides in recent years, as a result of educational campaigns conducted by the Government to relieve the need that has arisen because of the meat shortage and also as a means of building up the national standard of health. In England, during the last war years, where the populace as a whole have been compelled to subsist practically 90 per cent on the vege-

—USDA Photo (Forsythe)

A large part of America's bountiful harvest of vegetables and fruits is preserved each year by the nation's canners.

tarian diet, statistics show that in spite of the hardships incidental to the war, there has taken place amazing improvement, etc. in the national health and the radical lowering of mortality statistics due to natural causes.

In our own country has recently been brought to our attention the tragically low standard of our national health. Almost 40 per cent of our young men had to be exempted from military duty because of physical defects. Is it possible that dietary practices which include general consumption of demineralized cereals, overindulgence in white sugar through the media of candy and soft drinks, excessive use of meat products, accompanied by too much starch is greatly responsible for this low standard of health? Can it possibly be traced to the use of vegetables which have been overcooked, hence depriving them of their essential nutritive elements of minerals and vitamins? Is it due perhaps to the fact that our cooked foods contain a too generous use of spices and condiments inflicting on our digestive processes an added burden, which bring in their wake the national ailment of constipation with its attendant subsequent ills?

The emphasis on our national diet is always on sugar, starches, fats and proteins. The usual combinations which takes these food products as their main fundamentals make for an unbalanced diet. The assimilation and elimination of the concentrated foods manufactured from these elements places an enormous strain on the digestion out of all proportion to their immediate and ultimate benefits to the bodily organism. The results are frequent colds, headaches, constipation, sleeplessness, which have become national symptoms and which slowly but assuredly form the bases of chronic diseases in the middle and later years when the serious testing period for one's general health is reached and breached after a life of continued indulgence in unbalanced diet.

Is this general condition perhaps the reason for the constant growth in chronic ailments in this life-period of our population with the continuous increase in deaths from these causes as the inevitable consequence. National hospital and mortality statistics, supplemented by forever increasing drug-use, seem to support this contention.

The vegetarian diet seeks to cope with this calamitous condition by placing the emphasis always on the necessary mineral and vitamin element in rational eating. These elements are found, of course, in abundance in their natural state in fruits, vegetables and nuts. The vegetarian obtains his starch in baked potatoes, whole rye or whole wheat bread and unrefined cereals, bananas and the starchy vegetables properly prepared for consumption by not overcooking. His supply of sugar he obtains in fruits and honey and the use of brown sugar.

With regard to protein, there is a popular fallacy concerning the amount necessary to maintain bodily weight in rebuilding of wasted and used tissues,

How Much Protein Needed

The Harvard medical school in a recent test came to the conclusion that 50 grams of protein will adequately supply all protein needs of the body and that as little as five grams or what is known as complete protein will be sufficient. The rest of the protein can be obtained from what is known as incomplete protein sources, like grains, legumes, etc. This small quantity of complete protein need not be supplied by flesh foods but can be derived from cheese, milk, soybeans and green leafy vegetables. Such noted nutritionists as Sherman of Columbia, Hindhede of Denmark, and Ragnarburg of Germany, have proven that man can adequately subsist on very low quantities of protein, much lower than even the Harvard standard, and be the healthier and stronger for it.

In the opinion of the new-school dietitians there is too much emphasis on protein and starch in American meals with an insufficient balance or ratio of vegetables and fruits to neutralize these concentrated protein-starch elements and thereby help in their digestion and assimilation.

It is the contention of vegetarian-nutritionists that a balanced diet for day-by-day health maintenance must include at least one generous raw food course at each meal in the form of a plate of leafy or succulent vegetables or fruits. This is particularly true in the case of growing children who from their earliest years seem to favor the candy store and cake-bakery which has resulted in a national deterioration of teeth from the earliest years as one of the traceable results of this white-flour-refined-sugar indulgence.

In particular, the mother of the household is the one to regulate, control and introduce the progressive ideas in diet which is bound to have a determining influence towards the better health of the family group. She must learn to forego the traditions and prejudices of her youth in favor of the latest ideas in dietetics which favor whole and natural foods for true nutrition against refined and demineralized substances which are not only deficient in feeding the cellular structure of the body, but in essence create a basis for physical discord in the proper functioning of the organs and hence lay the foundation for temporary ailments, which, if repeated often enough, result in abiding or chronic conditions of ill-health.

Vegetarians contend that health is man's birthright. It is as natural to be well as to be born. All pathologic conditions, all diseases and all tendencies to disease, are the result of the transgression of hygienic and physiologic law based on the dicta of Nature. This is the science of health in a nut-shell.

Today we are noting the growth of our ideas on rational living and correct eating and its general acceptance by the more progressive school of healers as well as an advanced section of the public which has given serious study and consideration to the relationship between diet and health. We hope to see even greater strides in the ac-

ceptance of these nutritional truisms based on nature's laws. The word "vegetarian" is derived from the Latin word, "vegetus," which means strong and vigorous and we believe that the system of nutrition derived from vegetarianism stems not only from the innate humanitarianism of man who takes literally the commandment "Thou shalt not kill," but is also an instinctive recognition of the natural affinity of the human body for those foods which offer in the cleanest, most direct and most effective nutritive elements vitally necessary for its growth, development and constant replenishment.

APPENDIX A

RESOLUTION CONTINUING THE NEW YORK STATE JOINT LEGISLATIVE COMMITTEE ON NUTRITION

FEBRUARY 10, 1944

By Mr. Desmond:

Whereas, The joint legislative committee to study nutritional problems, created by resolution adopted April sixteen, nineteen hundred forty-two, and continued by resolution adopted by the nineteen hundred forty-three legislature, has been actively engaged in studying and investigating the problems relating to nutritional deficiencies and their effect upon the health of our people, and especially upon the war workers of this state, and

Whereas, The committee has investigated the need for factory canteens in war plants, vitamin feeding of war workers, organization of the state's nutritional services, fortification of foods, the penny-milk and school lunch program, diets in prisons and black markets in food, and

Whereas, There is an urgent need not only for continuation of these investigations but also for dietary surveys to determine the impact of price changes and rationing upon the various economic levels of our population and for additional studies of new problems directly affecting the nutritional status of our people, such as post-war, nutritional problems; now, therefore, be it

Resolved (if the Assembly concur), That the joint legislative committee to study nutritional problems, created by resolution adopted April sixteen, nineteen hundred forty-two, and continued by resolution adopted by the nineteen hundred forty-three legislature, be and it is hereby further continued, to consist of four members of the senate to be appointed by the temporary president of the senate and four members of the assembly to be appointed by the speaker of the assembly with full power and authority to continue its studies and investigations of the proper role the state should play in relationship to nutrition, and be it further

Resolved (if the Assembly concur), That such inquiry shall include a detailed dietary survey and a study of the post-war nutritional problems which may affect our people; and be it further

Resolved (if the Assembly concur), That the study and investigation hereby authorized is not limited to specific matters herein mentioned or enumerated but the committee in the conduct of such investigation may inquire into every matter and thing considered to be relevant to the problems of nutrition, even though not specifically mentioned herein to the same extent as though specific power and authority therefor were expressly granted herein; and be it further

Resolved (if the Assembly concur), That such committee shall organize by the selection from its

number of a chairman, a vice-chairman and a secretary and shall employ and may at pleasure remove a research director and other employees and assistants as may be necessary, and fix their compensation within the amounts made available therefore herein. Any vacancy in the membership of the committee shall be filled by the officer authorized to make the original appointment. The members of the committee shall serve without compensation for their services but shall be entitled to their actual expenses incurred in the performance of their duties hereunder. Such committee may sit at any place within the state as it may determine to conduct its labors, and it may hold either public or private hearings. Such committee or any member thereof shall have power to subpoena witnesses, administer oaths, take testimony and compel the production of books, papers, documents and other evidence and it shall have generally all the powers of a legislative committee as provided by the legislative law. Such committee may request and shall receive from all public officers and departments and agencies of the state and its political subdivisions, such assistance and data as will enable it properly to consummate its investigations; and be it further

Resolved (if the Assembly concur), That the committee shall report to the legislature on or before March first, nineteen hundred and forty-five the results of its studies and investigations and shall submit with its report such legislative proposals as it deems necessary to make its recommendations effective; and be it further

Resolved (if the Assembly concur), That the sum of fifteen thousand dollars ($15,000), or so much thereof as may be necessary, is hereby appropriated from the legislative contingent fund and made immediately available to pay the expenses of the committee, including personal service, in carrying out the provisions of this resolution. Such moneys shall be payable after audit by and upon the warrant of the comptroller on vouchers certified or approved by the chairman of the committee in the manner provided by law.

To Finance Committee. March 17 report. Adopted. March 18 in Assembly. Adopted. Chapter 315, Laws of 1944.

APPENDIX B

RESOLUTION CONTINUING THE JOINT LEGISLATIVE COMMITTEE ON NUTRITION

FEBRUARY 15, 1945

By Mr. Desmond:

Whereas, The joint legislative committee to study nutritional problems, created by resolution adopted April sixteenth, nineteen hundred forty-two, continued by resolution adopted March twenty-sixth, nineteen hundred forty-three, and further continued by resolution adopted March eighteenth, nineteen hundred forty-four, has been actively engaged in studies and investigations of problems relating to nutritional deficiencies and their effect upon the health of our people, especially on those residents of New York state engaged in war work, and

Whereas, There is an urgent need not only for continuance of such studies and investigations as the committee already has pursued, but also for an expanded program to include surveys of what extension of nutrition education is desirable to make it available to larger sections of our population, what role New York state should play in the nation's post-war food program, what the relationship of rationing and prices is to nutrition, and for studies and investigations of such additional problems as directly affect the nutritional status of people, now, therefore, be it

Resolved (if the Assembly concur), That the joint legislative committee to study nutrition problems is hereby further continued with all its powers and duties as contained in the original resolutions, and that such committee shall make its report, together with such legislative proposals as it may deem necessary, on or before March first, nineteen hundred and forty-six, and be it further

Resolved (if the Assembly concur), That the sum of fifteen thousand dollars ($15,000), or so much thereof as may be necessary is hereby appropriated from the legislative contingent fund and made immediately available to pay the expenses of the committee, including personal service, in carrying out the provisions of this resolution. Such moneys shall be payable after audit by and upon the warrant of the comptroller on vouchers certified or approved by the chairman of the committee in the manner provided by law.

To Finance Committee. March 13 reported. Adopted in both houses. Chapter 300, Laws of 1945.

APPENDIX C

STATE OF NEW YORK

3d Rdg. 195 Nos. 837, 1726, 2223 Int. 813

IN SENATE

February 2, 1945

Introduced by Mr. DESMOND—read twice and ordered printed, and when printed to be committed to the Committee on National Defense—reported favorably from said committee, committed to the Committee of the Whole, ordered to a third reading, amended and ordered reprinted, retaining its place in the order of third reading—amended and ordered reprinted, retaining its place in the order of third reading

AN ACT

To amend the New York state war emergency act, in relation to violations of rationing regulations, freezing or price fixing and penalties for such violations

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Section one hundred one of chapter four hundred forty-five of the laws of nineteen hundred forty-two, entitled "An act establishing the New York state war council, and providing emergency state and local governmental powers and agencies for civilian protection and for aiding the war effort," as amended, generally, by chapter five hundred forty-four of the laws of nineteen hundred forty-two, such section having been amended by chapter one hundred seventy-one of the laws of nineteen hundred forty-three, is hereby amended by adding a new subdivision thereto, to follow subdivision five, to be subdivision five-a, to read as follows:

5-a. Any person who shall willfully violate or disobey any order of the state council promulgating any rule, regulation or order concerning rationing, freezing or price fixing shall be guilty of an infraction.

§ 2. Section one hundred two of such chapter is hereby amended to read as follows:

§ 102. Punishment for infractions. Any person convicted of an infraction as defined by this act shall be punished by a fine of not more than twenty-five dollars or five days in jail or both*; provided however that any person convicted of an infraction of any rule, regulation or order, promulgated by the state council, concerning rationing, freezing or price fixing shall be punished by a fine of not more than five hundred dollars or not more than thirty days in jail or both, for each violation thereof.* All such fines collected in any city, town or village shall be paid to the city, town or village and credited to the general fund.

§ 3. This act shall take effect immediately.

EXPLANATION—Matter in *italics* is new; matter in brackets [ ] is old law to be omitted.

APPENDIX D

STATE OF NEW YORK

No. 699 Int. 688

IN ASSEMBLY

January 24, 1945

Introduced by Mr. WARD—(on behalf of the Joint Legislative Committee on Interstate Cooperation)—read once and referred to the Committee on Agriculture

AN ACT

To amend the agriculture and markets law, in relation to requiring certain flour and bread to have specified vitamin and mineral contents

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Chapter forty-eight of the laws of nineteen hundred twenty-two, re-entitled by chapter two hundred seven of the laws of nineteen hundred twenty-seven "An act in relation to agriculture and markets, constituting chapter sixty-nine of the consolidated laws," is hereby amended by adding a new article thereto, to be article seventeen-a, to read as follows:

ARTICLE 17-A

ENRICHMENT OF BREAD AND FLOUR

Section 215. Legislative purpose.
215-a. Definitions.
215-b. Vitamin and mineral standards for flour.
215-c. Vitamin and mineral standards for bread and rolls.
215-d. Power to establish other standards.

§ 215. Legislative purpose. The public demand for flour containing foods that are pleasing to the eye rather than of maximum benefit to the human body has encouraged, if not compelled, milling processes largely destructive of healthful vitamin and mineral contents. Undernourishment has been found to exist in a substantial number of families above relief levels. To provide the people the means of better nourishment, the council of state governments in conjunction with the federal government has developed a program for uniform enrichment of certain flours and breads throughout the nation, and this article sets forth the standards of enrichment now generally accepted as suitable as a basis for uniformity and makes them requisite in certain flour and bread, with power in the commissioner of agriculture and markets to vary these standards as necessity or better health formulae dictate.

§ 215-a. Definitions. As used in this article:

(a) "Flour" includes and shall be limited to the foods commonly

EXPLANATION—Matter in *italics* is new; matter in brackets [ ] is old law to be omitted.

known in the milling and baking industries as (1) white flour, also known as wheat flour or plain flour; (2) bromated flour; (3) self-rising flour, also known as self-rising white flour or self-rising wheat flour, and (4) phosphated flour, also known as phosphated white flour or phosphated wheat flour, but excludes whole wheat flour and also excludes special flours not used for bread, roll, bun or biscuit baking, such as specialty cake, pancake and pastry flours.

(b) "White bread" means any bread made with flour whether baked in a pan or on a hearth or screen, which is commonly known or usually represented and sold as white bread, including Vienna bread, French bread and Italian bread.

(c) "Rolls" means plain white rolls and buns of the semi-bread dough type, namely: soft rolls, such as hamburger rolls, hot dog rolls, Parker House rolls, and hard rolls, such as Vienna rolls, Kaiser rolls; but shall not include yeast-raised sweet rolls or sweet buns made with filling or coatings, such as cinnamon rolls or buns and butterfly rolls.

(d) "Commissioner" means the commissioner of agriculture and markets.

(e) "Person" means an individual, a corporation, a partnership, an association, a joint stock company, or any group of persons, whether incorporated or not, engaged in the commercial manufacture or sale of flour, white bread or rolls, and an institution supported wholly or partly by public funds.

(f) "Mg" means milligram.

§ 215-b. Vitamin and mineral standards for flour. Until the commissioner shall establish other standards, it shall be unlawful for any person to manufacture, mix, compound, sell or offer for sale for human consumption in this state flour, unless vitamins and minerals are contained in each pound of such flour as follows: not less than 2.0 mg and not more than 2.5 mg of thiamine; not less than 1.2 mg and not more than 1.5 mg of riboflavin; not less than 16.0 mg and not more than 20.0 mg of niacin or niacinamide; not less than 13.0 mg and not more than 16.5 mg of iron (Fe); except in the case of self-rising flour which, in addition to the above ingredients, shall contain not less than 500 mg and not more than 1500 mg of calcium (Ca); provided, however, that the terms of this section shall not apply to flour sold to distributors, bakers or other processors, if the purchaser furnishes to the seller a certificate in such form as the commissioner shall by regulation prescribe, certifying that such flour will be (1) resold to a distributor, baker or other processor, or (2) used in the manufacture, mixing or compounding of flour, white bread or rolls enriched to meet the requirements of this article, or (3) used in the manufacture of products other than flour, white bread or rolls. It shall be unlawful for any such purchaser so furnishing any such certificate to use or resell the flour so purchased in any manner other than as prescribed in this section.

§ 215-c. Vitamin and mineral standards for bread and rolls. Until

the commissioner shall establish other standards, it shall be unlawful for any person to manufacture, bake, sell, serve or offer for sale for human consumption in this state any white bread or rolls, unless vitamins and minerals are contained in each pound of such bread or rolls as follows: not less than 1.1 mg and not more than 1.8 mg of thiamine; not less than 0.7 mg and not more than 1.6 mg of riboflavin; not less than 10.0 mg and not more than 15.0 mg of niacin; not less than 8.0 mg and not more than 12.5 mg of iron (Fe).

§ 215-d. Power to establish other standards. Whenever the commissioner shall find that there is an existing or imminent shortage of any of the ingredients required by sections two hundred fifteen-b and two hundred fifteen-c, and that because of such shortage the sale and disposition of flour or white bread or rolls may be impeded by the inforcement of this article or that other standards are more conducive to the health of the people, he shall have the power to vary the same, but in doing so, if consistent with the good health of the people, he shall make the same identical with federal standards governing interstate shipments of the same products. The commissioner shall have and he is hereby vested with the power to thus vary standards by rule or regulations which shall have the force of law and within this power he shall have not only the power to vary the vitamin and mineral standards contained in sections two hundred fifteen-b and two hundred fifteen-c but the power to likewise change variations made by him as empowered by this section; but the standard of measurement of the exercise of these powers shall always be "that which is in the best interest of the public health." The commissioner shall hold a public hearing upon any proposal to vary any standard of enrichment. If and when the commissioner shall establish other standards, sections two hundred fifteen-b and two hundred fifteen-c shall remain in full force and effect differing only in respect to the vitamin and mineral standards, which the commissioner is empowered to vary by this section.

§ 2. This act shall take effect January first, nineteen hundred forty-six.

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